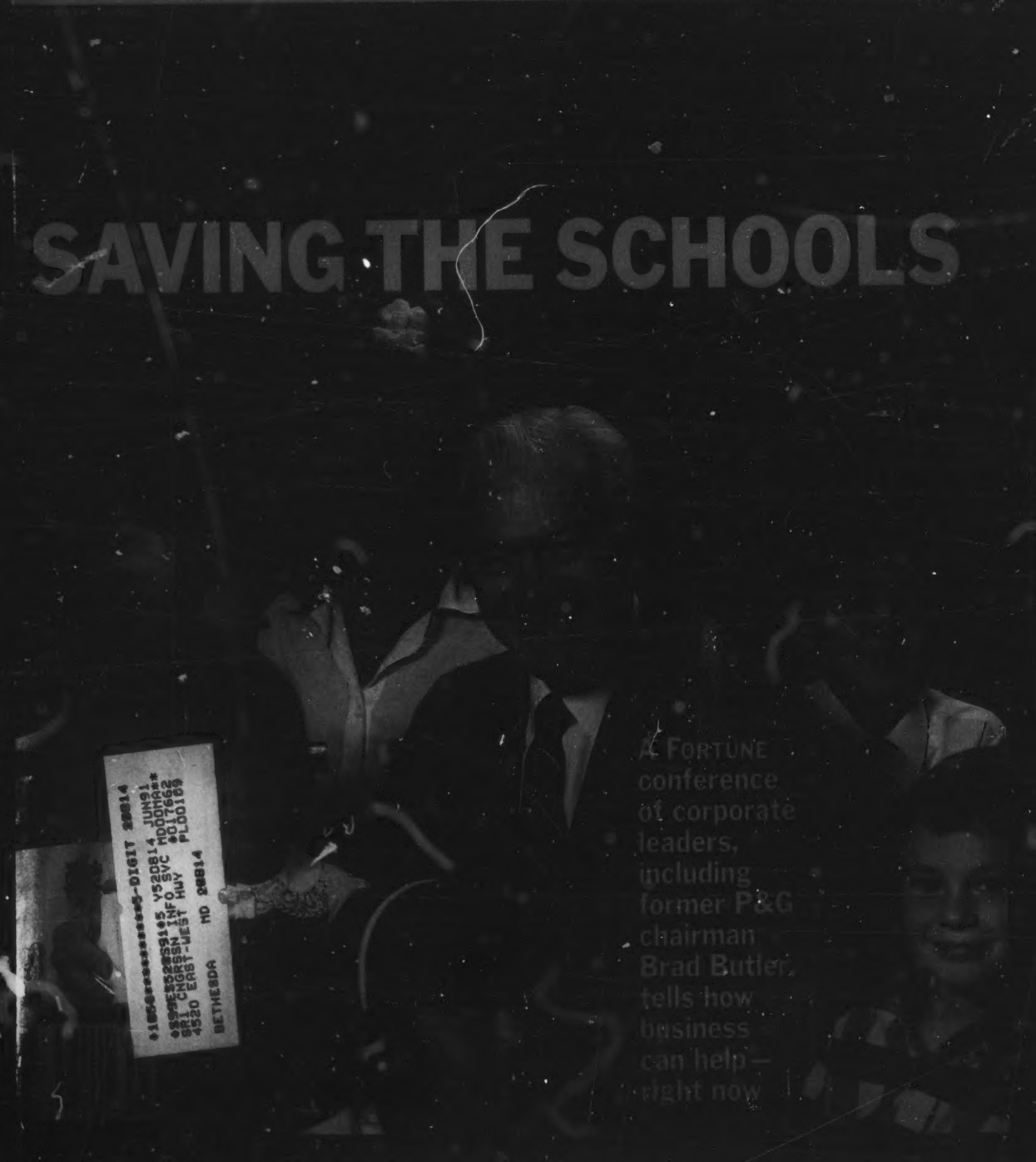
■ CORPORATE SPYING • CEOs WHO WORK CHEAP • MIKE MILKEN, PHILA[illegible]

C8906-1
10/21/89

SAVING THE SCHOOLS



A FORTUNE conference of corporate leaders, including former P&G chairman Brad Butler, tells how business can help—right now

*1[illegible]-DIGIT 20814
*S9ESS2[illegible]91*5 Y520814 JUN91
SR1 CNGRSSN INFO SVC MD00MA**
4520 EAST-WEST HWY $017662 PL00169
BETHESDA MD 20814

NOVEMBER 7, 1988

FORTUNE

JACKSON HILL—SOUTHERN LIGHTS

GE is working to triple the number of college-bound youngsters in Lowndes County, Alabama.

COVER STORY/PAGE 42

SPECIAL REPORT/Cover Story

SAVING THE SCHOOLS: HOW BUSINESS CAN HELP 42

In an age where nations increasingly compete on brainpower, America is producing an army of illiterates. Companies that need skilled workers now realize they must do something to save the public schools. Not to be charitable, not to promote public relations, but to survive. A FORTUNE conference of corporate leaders, educators, and politicians tells what steps business can take now. *by Nancy J. Perry*

BRAD BUTLER'S CRUSADE FOR BETTER SCHOOLS 50

COVER: Frank Schramm photographed former Procter & Gamble Chairman Brad Butler at the Roselawn Condon School in Cincinnati.

CORPORATE PERFORMANCE

HAMMER HITS 90! OXY GROWS UP TOO 59

Occidental Petroleum won't earn its dividend again this year. Not to worry, says czar Armand, his company has reformed. Surprise: Wall Street agrees. *by Anthony Ramirez*

MANAGING

CORPORATE SPIES SNOOP TO CONQUER 68

Many companies are learning something the Japanese have known—the value of competitive intelligence. One lesson: Forget the James Bond stuff. *by Brian Dumaine*

DEALMAKERS

'HOW I TURNED $3,000 INTO $10 BILLION' 80

Sir Gordon White did it in 15 years, building an American conglomerate. The British dealmaker tells how he squeezes millions out of acquisitions—without even visiting the properties.

MONEY & MARKETS

A CASE OF TOO MUCH MONEY 93

Flush with cash, venture capitalists are running out of startup opportunities and scouring unlikely industries. *by Alan Deutschman*

POLITICS & POLICY

DO THE DUKAKIS PARTNERSHIPS PAY? 109

Except for job-training programs, the governor's public-private joint ventures do little the marketplace cannot do better. *by Louis S. Richman*

VOL. 118, NO. 11

"The only motive Michael Milken has in operating these charitable foundations is public-spiritedness."

PAGE 10

"If you drop a dead cat off a tall enough building, he's going to bounce."

PAGE 29

"As always, we found a mix of pie-in-the-sky budgets and unpolished jewels."

PAGE 80

"All I got was an armored car and a pay cut."

PAGE 121

"The wonderful thing about Asians is that they buy premium brands."

PAGE 147

"Cast your bread upon the waters, but wait until the tide is coming in to do it."

PAGE 201

COMPENSATION

AMERICAN BOSSES ARE OVERPAID . . . 121

. . . Or their counterparts in Europe are strikingly underpaid. However you argue it, the gap is too huge to last, and U.S. chief executives are most unlikely to cut their own remuneration. Already big bonuses and stock options are hopping the Atlantic. *by Shawn Tully*

THE ECONOMY

IS THE SAVING RATE REALLY THAT BAD? 138

Not quite, if you measure it broadly. But it isn't what it used to be, and a generation accustomed to rising stocks, pensions, and house prices needs more incentives, like the old IRAs, to put aside enough for its own good. *by David Sylvester*

SELLING

HOW TO SELL TO CASHLESS BUYERS 147

Notorious for debt and poverty, developing countries are surprisingly good markets for companies with a sense of adventure. The Third World buys about one-third of U.S. exports and is a frontier for future sales. But making a profit takes creativity. *by Louis Kraar*

COMPETITION

BRINGING BIOTECH DOWN TO EARTH 159

The new wonder drug seekers thought they would be able to ride genetic engineering to billion-dollar sales years, and so did Wall Street. Now the big pharmaceutical houses are wading into the market. The biotechies had better learn how to make pills. *by Gene Bylinsky*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 8

NEWS/TRENDS— 10

Philanthropist Mike Milken, new offerings from Trump and Jobs, pragmatic PACs, an official call for the Japanese to take it easy, and more.

FORTUNE FORECAST 25

As the world economy heads for a year of slow but solid growth, the U.S. will regain the export market share it lost during the 1980s—and more. *by Vivian Brownstein*

PERSONAL INVESTING 29

Wall Street prognosticators concur on these growth companies' 1989 earnings. *by Joshua Mendes*

Also: High-yielding but risky new REITs, funds that do the splits, and Portfolio Talk with Binkley Shorts of Over-the-Counter.

COMPANIES TO WATCH 64

FORTUNE PEOPLE 201

Trivia champ Mitch Kapor, Iacocca's olive oil, and more. *by Stephen Madden*

ON THE RISE 202

BOOKS & IDEAS 205

Ambitious social policies inevitably do the opposite of what they were intended to, argues Charles Murray. *by Myron Magnet*

LETTERS TO FORTUNE 211

KEEPING UP *by Daniel Seligman* 215

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Ray Cave
CORPORATE EDITOR Gilbert Rogin

MAGAZINE GROUP
PRESIDENT Reginald K. Brack Jr.
GROUP PUBLISHERS S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith, Richard B. Thomas

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Rosalind Klein Berlin, Vivian Brownstein, John J. Curran, Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (Menlo Park, California), Ronald Henkoff, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S.Richman, Bill Saporito, Lenore Schiff, Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, Kate Ballen, J.B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Alan Farnham, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, David Kirkpatrick, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Stephen Madden, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo)
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, [illegible] James
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Karen Andrews, Charles J. Attardi, Leslie Brenner, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, George J. Habit, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Maureen Mallon Cluen (director), Guy Gleysteen (assistant manager)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Michael J. Clayton

U.S. ADVERTISING SALES DIRECTOR John E. Haire
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

BRAD MARKEL (2)

P&G's Pepper and former chairman Brad Butler at FORTUNE's Education Summit

LET'S STOP lamenting the crisis in America's schools and start doing something about it. With that in mind, FORTUNE in late September convened a conference of 106 leaders of business, government, labor, and academe to discuss exactly what business can—and should—do. The drive to improve education is uniting corporate chiefs to a degree that no social issue has before. At our two-day Education Summit in Washington, D.C., Procter & Gamble President John Pepper traded ideas with Ford Chairman Don Petersen and American Express President Lou Gerstner, among many others. Former Secretary of Education William Bennett, a critic of teachers' unions, found himself in rare agreement with American Federation of Teachers President Albert Shanker. Both said that what the schools need is not small changes but more like a "revolution."

Our cover story, beginning on page 42, highlights the most promising proposals, plus lessons that GE, Ashland Oil, and other companies have learned in trying to upgrade schools in regions where they hire. The project was supervised by editors Ann Morrison, a onetime Head Start assistant teacher, and Susan Fraker, who once helped aspiring journalists as a Vista volunteer. Associate editor Nancy Perry, who wrote the story, was educated in the public schools of Dallas and planned to be a teacher before she eventually chose journalism.

THE EDUCATION SUMMIT

Writer Perry addresses a session.

Lucky for us. Ever since Perry wrote "The Education Crisis: What Business Can Do" (FORTUNE, July 4), she has been invited to speak about the subject in many parts of the country. In the tiny eastern Pennsylvania town of Morrisville, for example, superintendent Jim McDowelle recruited Perry to talk to the school board, which confronted its own crisis—an $866,000 deficit that taxpayers refused to help finance. As he reported, "Before Nancy spoke, there was a lot of finger-pointing in the community. She told us about other school districts with similar problems, and that helped us focus on ours in a nonparochial way." Today the Morrisville school board is united and may merge its district with an adjoining one. In the meantime, it has secured a ten-year loan.

Answers don't come easily, but FORTUNE can at least provide insight and advice. We hope "Saving the Schools" is a valuable step in the process.

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by Time Inc. Time Inc. principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. N. J. Nicholas Jr., President; Kevin D. Senie, Treasurer; Philip R. Lochner Jr., Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, FL 33630-0604. © 1988 Time Inc. All rights reserved. FORTUNE is a registered mark of Time Inc.

Faxing by credit card at the Sofitel Hotel in Redwood, California

night delivery services. **Faxplus**, for example, charges $8 for ten minutes, plus the long-distance telephone fee.

About 600 machines have been installed so far. **Northwest Airlines** put 13 of them at U.S. airports, including Boston's Logan and Chicago's O'Hare, and one at London's Gatwick.

By the end of the year, **United Air Lines** plans to install 12 units in its Red Carpet Club lounges around the country. Bill McCue, who publishes a directory of public fax stations, estimates that by the end of 1991, fax freaks will find about 2,000 charge-it machines in the U.S. alone. **–Carrie Gottlieb**

GRAND MET'S GRAND DESIGN

■ Even as the directors of **Pillsbury** were studying the $5.2 billion takeover bid from Britain's **Grand Metropolitan**, Phyllis Martin, whose husband Ian heads Grand Met's U.S. operations, was reading the official guide to happenings in Minnesota. Pillsbury is based in Minneapolis, which is where Martin hopes to move Grand Met's worldwide food division headquarters.

Mrs. Martin's confidence—if not equanimity, since it would be her 16th move in 25 years—isn't necessarily shared on Wall Street. Some financial analysts say the bid is essentially a done deal; others, that another European company will step in and raise the ante. But all agree that Pillsbury will change hands. "It's way too late for a restructuring," says an investment banker.

Martin explains Grand Met's bid as a continuation of Chairman Allen Sheppard's strategy to build a global empire of food, drink, and retailing businesses using high-profile brand names. Grand Met has sold companies that don't fit the plan, among them **Inter-Continental Hotels** to Japan's **Seibu Saison Group** for $2.3 billion just four days before the Pillsbury grab.

Such well-known Pillsbury names as Burger King and Green Giant would suit Grand Met just fine. "No pun intended," says Martin, "but the company is a sleeping giant."

Ian Martin and his top brands

Burger King, the perennial also-ran to **McDonald's**, is in for a special wake-up call from Martin, a droll Scotsman, onetime ITT executive, and former head of Grand Met's brewing division. He says the chain's past marketing campaigns have been off the beam. Martin also is likely to make big changes at Pillsbury's headquarters. Nine months after Martin took over at Inter-Continental, 33% of the corporate staff was gone.

European bankers love Grand Met. They rushed to lend the cash for the Pillsbury deal. If that bid fails—"We don't pay silly prices for anything," says Martin—Grand Met will probably buy something else. **–Colin Leinster**

PRAGMATIC PACS PREFER INCUMBENTS

■ What labor is to Democrats, big business is to Republicans, right? Not when it comes to money. Corporate America is backing Democrats over Republicans in November's Senate and House elections. Pragmatism says it all: Most politicians who want to be reelected are, and most of the Congressmen who are running again this year are Democrats. It never hurts to have friends in high places.

AT&T is the biggest giver among corporate political action committees (see table). Its beneficiaries include two of the most powerful Democrats on Capitol Hill: vice presidential candidate Senator Lloyd Bentsen and House Speaker Jim Wright. These two Texans got $10,000 each from AT&T.

United Parcel Service gives *only* to incumbents, among them Glenn Anderson, a California Democrat, who got $7,000. He chairs the House Public Works and Transportation Committee.

Critics of PAC power stem from all points of the political spectrum. Says David Staton, manager of political action programs at the conservative U.S. Chamber of Commerce: "Some corporations are just interested in doing a deal with whoever's in there." Adds Susan Manes, vice president for issue development at liberal Common Cause, a citizens' group: "The House of Representatives is becoming the House of Lords; the Senate, a millionaires' club." **–F.H.K.**

WHO GIVES MOST TO WHOM

AT&T	[illegible] to 279 Democrats	[illegible] to 224 Republicans
UPS	[illegible] to 241 Democrats	[illegible] to 150 Republicans
PHILIP MORRIS	[illegible] to 152 Democrats	[illegible] to 128 Republicans
FEDERAL EXPRESS	[illegible] to 100 Democrats	[illegible] to 36 Republicans

SOURCE: FEDERAL ELECTION COMMISSION

STEVE JOBS: WHAT'S NEXT?

■ "I'm a little nervous," confessed Steven P. Jobs to a packed San Francisco symphony hall where he unveiled his new computer. The powerful,

BY VIVIAN BROWNSTEIN

SLOW BUT STEADY GLOBAL GROWTH WILL KEEP THE GOOD TIMES ROLLING

OVERVIEW

- **The U.S. will regain the export market share it lost during the 1980s—and more.**
- **Inflation will pick up in most major industrial countries.**
- **Governments will try to hold the dollar fairly stable.**

■ It's chicken-and-egg time. Economic growth in the U.S. will drop from 3.9% this year to 2.5% in 1989, and it will fall as well in other industrial countries. A major reason for the U.S. slowdown is that exports will expand less rapidly. But why will foreign economies be less dynamic? You guessed it: The U.S. won't buy as much from abroad. Don't ask which comes first. But even with slower growth, the increasingly interdependent economies of the industrial world should have a tolerable year.

Keep in mind that the U.S. is still far and away the biggest market for the rest of the world's output as well as its own. Americans bought 16.5% of last year's $2.5 trillion global import total, almost twice as much as any other country. Though most American businesses can make money selling to the home market alone, companies in other industrial countries don't have that luxury. By next year the U.S. will have regained all the share of the world export market it lost while the dollar was soaring, and more. Yet only 11% of its real GNP will be generated by exports. West Germany, by contrast, relies on exports for more than one-third of its GNP.

For all its weight in the world economy, the U.S. is highly vulnerable these days to what happens abroad. August's trade deficit, which jumped to $12.6 billion from $9.5 billion the month before, is a pointed reminder of that foreign connection. U.S. economic policies for years to come will be shaped by the continuing large deficit, the growing foreign debt that must be serviced, and the painful memories of the dislocations that businesses suffered over the past several years. The Federal Reserve, for example, must try to keep the dollar on an even keel—if it moves too low, inflation will worsen; too high and U.S. exporters suffer. That means the Fed could have a hard time countering weakness in the economy or leaning against rising inflation. And the intractable federal budget deficit leaves little room for fiscal policy to fight any slowdown in growth. The U.S. won't get pneumonia if the rest of the world catches a bad cold, but it could suffer an uncomfortable sneezing spell.

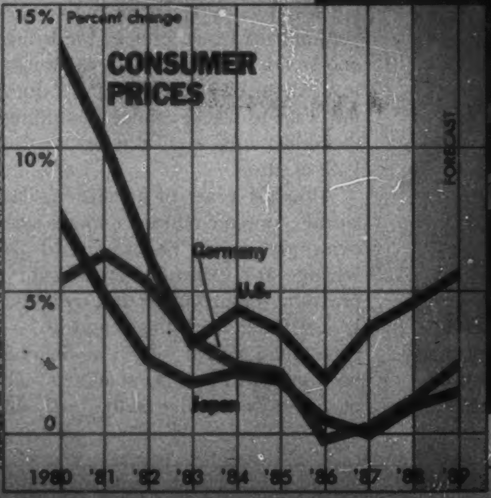
Inflation poses the worst risk to world economic health. FORTUNE believes that U.S. prices will rise by 5.7% in 1989, compared with less than 4.5% this year. And we have no argument with the International Monetary Fund's latest projections, which indicate faster-rising prices in West Germany and Japan as well (see chart). The rates themselves aren't overly rambunctious; the threat is that one or more countries will go too far in attempting to keep inflation down. Every economist has a recession scenario that starts with prices accelerating, follows with monetary authorities clamping down on money growth and raising interest rates, and ends with the economy braking too abruptly.

The scenario could most easily develop in West Germany, where fervid inflation fears date back six decades. Germany's central bank, the Bundesbank, continues to maintain restrictive monetary conditions; it

GOTZ G. LINZENMEIER

HEADING UPWARD EVERYWHERE

West Germany's inflation is rising, along with everyone else's. But it hasn't slowed these shoppers, taking a breather in a Hamburg mall.



SOURCES: IMF FOR GERMANY AND JAPAN; FORTUNE FORECAST FOR U.S.

CHIEF ECONOMIST *Todd May Jr.*
ASSOCIATE ECONOMIST *Vivian Brownstein*
STAFF ECONOMIST *Maureen F. Allyn*
RESEARCH ASSOCIATES *Catherine Comes Haight, Lenore Schiff, Rahul Jacob*
FORTUNE'S *forecast is produced by this magazine's economists using our own economic model.*

has increased interest rates several times in recent months. Domestic demand is sluggish, and most observers expect GNP growth to sink below 2% next year from about 3% in 1988. Still, German authorities will continue to resist American pressure to stimulate, says Mieczyslaw Karczmar, Deutsche Bank's New York economic adviser. Their contention: Businesses don't want to hire because the country's rigid labor laws make it so difficult to fire. Thus, any attempts to bolster the economy would not reduce unemployment but would just lead to more inflation.

JAPAN, too, is responding to inflation worries. Experts differ in their forecasts for the country: The IMF expects a slowdown in growth from this year's 5.8% to 4.2% in 1989, along with an increase in inflation from 1.1% to 1.6%. Bill Belchere, director of international forecasting services for the WEFA consulting firm, thinks growth may dip below 4% and inflation will rise to 2%. Belchere points out that capacity utilization is already extremely high, and labor markets are very tight.

Japan's policymakers are taking measured steps, says Jeremy Hale, senior international economist of the Goldman Sachs investment firm. Monetary authorities are urging banks to "voluntarily"—as in voluntary auto quotas—restrain lending. They have also raised short-term interest rates. But unlike the Germans, the Japanese have some solutions in mind that could help world growth. The central bank, the Bank of Japan, is urging the government to encourage imports by relaxing regulations as one way of holding down inflation. That kind of thinking is just what the rest of the world's exporters like to hear.

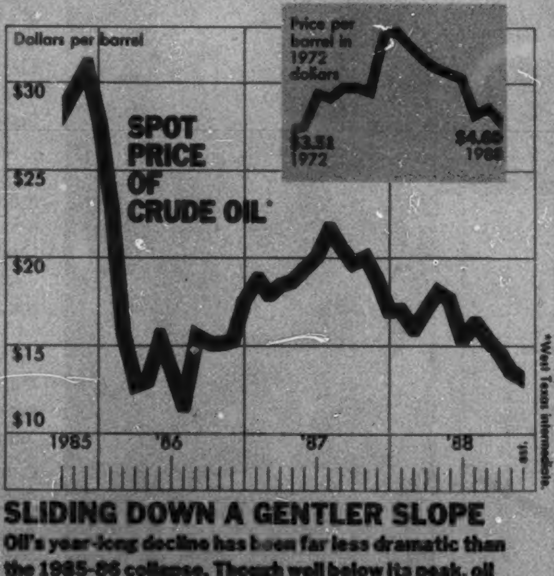
For the time being, the Bank of Japan is setting aside worry that Japanese demand could eventually claim so much of the world's capacity that higher inflation would erupt everywhere, especially among the newly industrialized countries. For example, the bank estimates that a 5% rise in Japanese imports is enough to boost Korean real GNP by 1%. This could put quite a lot of pressure on the NICs' production capacity. Ranjan Pal, the WEFA group's resident NIC expert, says increases in domestic consumption are already catching up with the growth of output in Taiwan and Korea. One happy consequence for exporters elsewhere, says Pal, is that these countries will be more apt to open their doors to imports.

SLOWDOWN IN THE INDUSTRIAL WORLD

	GROWTH IN REAL GNP	
	1988	1989
Japan	5.8%	4.2%
Canada	4.3%	3.2%
Britain	4.0%	2.5%
United States	3.9%	2.5%
Italy	3.0%	2.4%
France	2.9%	2.4%
West Germany	2.9%	1.9%

[illegible]

Lower oil prices could take some heat off the inflation outlook in many countries. As the chart shows, the latest drop is really a continuation of a trend that began more than a year ago. By mid-October the price of West Texas intermediate, a crude oil regularly traded in the spot market, had fallen to $13.50 per barrel from the recent peak of $21.59 in July of last year. The gradual decline is in sharp contrast to the collapse nearly three years ago. And the effect could be more beneficial, especially for the U.S. economy. Other countries, such as Japan, would not gain as much relative to the U.S. this time. During the past couple of years Japan had the double benefit of oil priced lower in dollars even as the dollar was falling against the yen—a big reason Japanese companies could hold the line on export prices long after the dollar peaked in early 1985. This time the dollar is not likely to decline so much.



SLIDING DOWN A GENTLER SLOPE

Oil's year-long decline has been far less dramatic than the 1985-86 collapse. Though well below its peak, oil still costs one-third more in real terms than in 1972.

In the immediate future oil prices could go either way. Saudi Arabia could force crude oil down to $5 per barrel if its fellow OPEC members don't get production back into line with agreed quotas. But the response would likely be swift, and the price would soon return to at least today's level. Looking out a few years, an average close to the OPEC marker price of $18 per barrel seems likely. It's high enough to generate satisfactory revenues for the Persian Gulf producers, but low enough to dampen U.S. exploration efforts. In real terms today's oil prices are not especially cheap: Based on pre-oil shock 1972 prices, a barrel that cost $3.51 then would cost $4.60 now. At $18, oil would give producers a 90% premium over real 1972 prices for their depleting resource.

Prospects for the dollar's holding relatively stable in the year ahead look good. It will be buffeted by trade developments and by America's progress, or lack of it, on tackling the budget deficit. But the major countries of the world now appear to agree that stability is desirable—even at the price of some internal grumbling. German industrialists, for example, want the dollar to strengthen against the mark to enhance their international competitiveness, while the Bundesbank is plumping for the reverse, hoping to hold down inflation. Japanese businesses would also like a stronger dollar. But Jeremy Hale thinks that the central bank would prefer a moderate and steady yen appreciation, though it won't say so openly because it does not want to take a chance of sending the dollar into a tailspin before the U.S. election.

After six years of expansion, the world economic outlook remains surprisingly good. Things could go wrong—for example, inflationary pressures might worsen quickly in the U.S. if the dollar plunges and in Europe and Japan if oil prices bounce back sharply. For now, plan on a year of slower but solid growth. ■

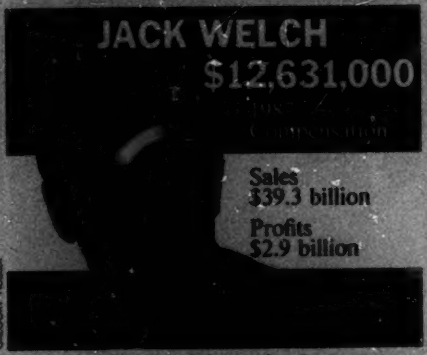
AMERICAN BOSSES ARE OVERPAID . . .

. . . Or their counterparts in Europe are underpaid. However you argue it, the gap is too huge to last. Big bonuses and stock options are hopping the Atlantic.

■ *by Shawn Tully*

U.S.

GENERAL ELECTRIC



JACK WELCH

$12,631,000

1987 [illegible] Compensation*

Sales
$39.3 billion

Profits
$2.9 billion

GREGORY HEISLER

*Includes $10,574,000 profit from stock options.

FROM EUROPE to the Orient, top managers are strikingly underpaid compared with their U.S. counterparts. Chief executives of 24 U.S. companies, including Du Pont, Sara Lee, Toys "R" Us, and Lotus Development, earned $5 million or more last year, counting bonuses and profits from the exercise of stock options. Some 300 CEOs earned at least $1 million. Second bananas did pretty well too. More than 100 assorted vice chairmen, chief operating officers, and executive vice presidents took home total compensation that topped the $1 million mark.

Million-dollar-a-year packages for any executive are about as common in Europe and Asia as Cadillac stretch limousines. A. Daniel Meiland, a Dane who heads the North American offices of executive search firm Egon Zehnder, figures that no more than 30 chief executives of large European companies earned that much in 1987. The number in Asia is probably even smaller (see box).

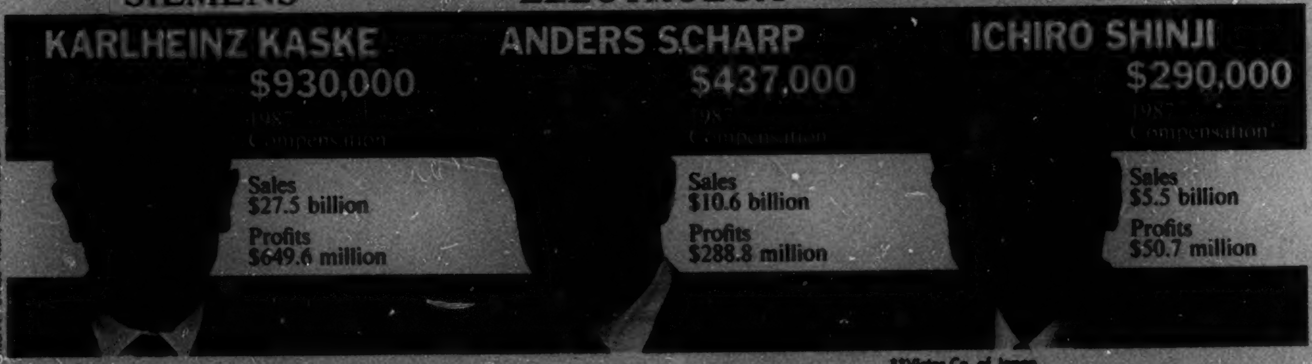
The vast difference between the U.S. and the rest of the world has persisted despite the marked appreciation of many currencies against the dollar. It stems from deeply rooted differences in history, culture, and government policies. You could argue, as many critics do, that Americans make too much. Whether that is so or not, the disparities have grown so great that some adjustment is due. Since U.S. chief executives are unlikely to cut their own pay, look for Europe, if not Asia, to catch up fast.

Among Europeans the Germans have gained the most ground so far. The average pay for heads of West Germany's five largest industrial companies—among them automaker Volkswagen and electronics producer Siemens—was $1 million (vs. $2.8 million for the top five in the U.S.). Though a few Britons, mainly in financial services, have soared into American salary ranges, the average for the largest British companies was $500,000. In France chief executives of the dozen largest companies, a group that includes automaker Renault and industrial gases producer Air Liquide, earned an average of $400,000.

Most striking is how poorly paid are Europe's superstars, managers who have helped shape some of the world's best companies and made billions of dollars for shareholders. Anders Scharp, who has turned Sweden's Electrolux into the world's largest appliance maker, with $10.6 billion in sales last year, had total compensation of just $437,000. Jack Welch at General Electric was paid $2.1 million in salary and bonuses and exercised $10.6 million of stock options. Sir Peter Walters has guided British Petroleum's transformation in this decade from a stodgy state-owned company into a nimble private producer. Yet Walters earned just $582,000 last year, small change alongside Exxon Chairman

REPORTER ASSOCIATES *Jonas Bernard Blank, Aimery Dunlap Smith*

WEST GERMANY | SWEDEN | JAPAN



SIEMENS

KARLHEINZ KASKE

$930,000

1987 [illegible] Compensation

Sales
$27.5 billion

Profits
$649.6 million

ELECTROLUX

ANDERS SCHARP

$437,000

1987 [illegible] Compensation

Sales
$10.6 billion

Profits
$288.8 million

JVC**

ICHIRO SHINJI

$290,000

1987 [illegible] Compensation*

Sales
$5.5 billion

Profits
$50.7 million

MICHAEL LANGE—VISUM, [illegible]

*Estimated.

**Victor Co. of Japan.

Lawrence Rawl's total compensation of $5.5 million.

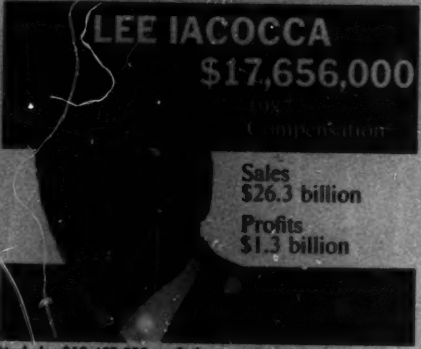
Europe's Lee Iacocca—in performance, not pay—is Jacques Calvet, president of French automaker Peugeot. Since 1984, Calvet has steered Peugeot from near bankruptcy to robust profits, boosting the company's market value more than ten times, to nearly $5 billion. Yet Calvet, who works in a small office and locks his phone to prevent unauthorized calls, earned about $250,000 in 1987. That is less than 2% of Iacocca's average compensation of $16 million annually for the past three years, including proceeds from stock options. A pretty good bargain. (Iacocca did, however, work for $1 in 1979, the year Chrysler negotiated its bailout by the government.)

WHY ARE pay packages so much lower in Europe than in the U.S.? The explanation begins with the way executives are paid in different countries. The bonuses, stock options, and other types of variable compensation that propel U.S. paychecks into the millions are far less lavish in Europe. American compensation packages typically have three main elements: base salary, a bonus based on the most recent year's performance, and long-term compensation, ranging from stock options to cash payments based on the company's results over three to five years. In a study of the 100 largest U.S. companies, the consulting firm Towers Perrin Forster & Crosby found that chief executives' pay averaged over $1.5 million. Of that, only $600,000 came from salary; the one-year bonus and long-term compensation added $940,000.

A shift in Europe toward U.S.-style compensation should prove a key trend in the next several years. Stock options, nonexistent just four years ago, are catching on fast. Says Arthur Bierwirth, an international compensation specialist with Towers Perrin in New York: "The increase in variable compensation could make hundreds of European executives very wealthy in the 1990s."

U.S.

CHRYSLER



LEE IACOCCA

$17,656,000

1987 Compensation*

Sales
$26.3 billion

Profits
$1.3 billion

GREGORY HEISLER

*Includes $13,459,000 profit from stock options.

Spurred by the European Economic Community's drive to remove all barriers to trade by 1992, companies are starting to treat Europe as a unified market, not just for products but for managers as well. Competition for top talent is heating up. Says Robert Mosley of Hay Management Consultants in London: "Today in Europe you have to pay well to attract the best." Executive search has become a growth industry. Companies that once promoted mainly from within now raid competitors for chief executives or senior managers.

Many European executives so far have seemed less interested in money than their American counterparts. Says Victor Dial, an American who heads sales for Peugeot and was formerly a top executive with Ford of France: "In Europe the greed factor is lower than in the U.S." Loïk Le Floch-Prigent, who led France's state-owned chemical giant Rhône-Poulenc to a spectacular recovery, is a prime example. Jovial and hirsute, Le Floch-Prigent lives in a spartan apartment complex in a working-class neighborhood on the outskirts of Paris. He drives a Renault 5, basic transportation for recent college grads.

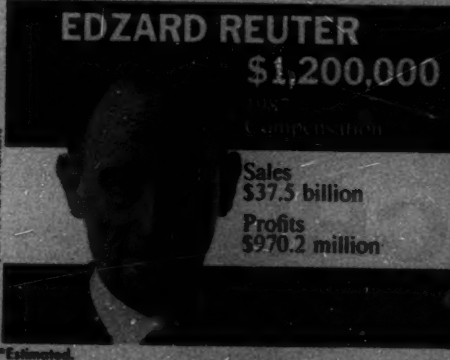
As chief executive from 1982 to 1986, Le Floch-Prigent, 45, earned about $150,000 a year. He got no stock options, bonuses, or golden handshakes. Now he is a leading candidate for the top job at France's biggest company, state-run oil producer Elf-Aquitaine—where he expects to earn another lean paycheck. To Le Floch-Prigent, that's okay: "Some people want to make money and show it off. I want to create."

Culture plays a role. Europeans generally consider displaying wealth—and sometimes even accumulating it—to be gauche. Says Erik van Galen, an executive search consultant for Boyden International in Paris: "A Frenchman would much rather show off the Renoir he inherited than say he makes $1 million a year." Typically the future captains of French industry graduate from the Ecole Polytechnique and the Ecole Nationale d'Administration, prestigious training grounds for public service, then spend at least a decade working for the government. At age 35 or 40, when they leave the ministry of industry or finance to take a top industrial job, their new salaries seem like a fortune compared with puny government wages.

In the 1970s British managers were not overly concerned with making money for themselves—or sometimes even for their companies. Says Don Young, personnel director at British electronics company Thorn EMI: "The old guys were more con-

WEST GERMANY

DAIMLER-BENZ



EDZARD REUTER

$1,200,000

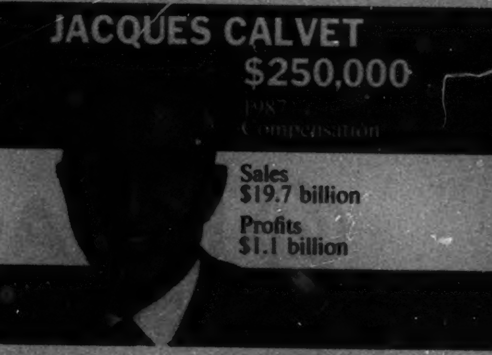
1987 Compensation

Sales
$37.5 billion

Profits
$970.2 million

FRANCE

PEUGEOT



JACQUES CALVET

$250,000

1987 Compensation

Sales
$19.7 billion

Profits
$1.1 billion

JAPAN

HONDA

TADASHI KUME

$450,000

1987 Compensation*

Sales
$17.2 billion

Profits
$516.2 million

ROB KINMONTH, LE NOUVEL ECONOMISTE

DAVID STOCK

*Estimated.

cerned with belonging to the right clubs and having separate executive lavatories."

It's not that Europeans can live more cheaply than Americans. A two-bedroom apartment in a chic Paris neighborhood sells for $600,000, and lunch for two at the restaurant Laurent near the Champs Elysées runs $250. A three-bedroom house in the Frankfurt suburbs costs $650,000. Though personal income taxes have come down a bit, they are still far higher than in the U.S. The top marginal rate is more than 80% in Sweden, 57% in France, and 40% in Britain. In addition, value-added taxes on consumer products range from 38% in Italy to 12% in Spain.

American executives assume that their European counterparts make up for lower pay with fancy perquisites, and to an extent they're right. According to a Towers Perrin study, perks add from 4% to 13% to compensation in most European countries, compared with 2% in the U.S. Jan Carlzon, the president of Scandinavian Airlines System, earns around $400,000 a year and also gets the use of a luxurious suburban villa near Stockholm owned by the company. Corporate cars frequently come with the top jobs. Kent Price, chief executive of Chloride Group, a British battery producer, drives a $45,000 company-owned Daimler 3.6. Still, that era may be ending. Though companies are not taking perks away, neither are they creating new ones. And many governments have begun taxing fringe benefits. Italy, among other countries, has closed the loopholes for company housing, insurance, and free travel for spouses.

The relatively high pay in West Germany stems mostly from a boom in bonuses. Stock options are effectively banned be-

WHY ASIAN CHIEF EXECUTIVES GET SUCH SMALL SALARIES

■ Like many Japanese companies, Toray Industries, the country's biggest maker of synthetic fibers, was hurt by the strengthening yen. The $6-billion-a-year company saw its domestic market eroded by Asian competitors. Then last year the company turned around dramatically, with much of the credit going to Katsunosuke Maeda, 57, a career Toray manager who became president in mid-1987. Credit, that is, in the form of a pat on the back. Maeda, who preached globalization and diversification, was paid just $240,000 last year, including bonus.

That's just about average for all Japanese companies. Maeda's counterparts in South Korea make $80,000 to $130,000 a year, according to Towers Perrin Forster & Crosby, the U.S. consulting firm specializing in executive pay. The average for a top executive in Taiwan is $55,000, and in Singapore, $165,000.

Unlike Europe, Japan seems unlikely to change its basic pay system anytime soon. Japanese executives are almost always home-grown managers rather than hotshots brought in to turn around a flagging enterprise. Teamwork is the ideal, though of a special kind. A spokesman at a major steelmaker describes it this way: The Japanese top executive is "sitting on *mikoshi*," the ornate palanquins carried during traditional festivals. "The managers underneath," he says, "are doing the hoisting."

The Japanese chief executive's job includes setting an example and demonstrating that management has more than self-interest in mind. When the steel industry went into decline, top executives quickly cut their own pay. In return for loyalty, Japanese managers get a benefit: They need not fear for their jobs.

The wage gap between ranks tends to be incremental—by rule of thumb a Japanese chief executive's pay comes to about ten times that of a new recruit. In the U.S., top salaries can exceed 100 times the pay of an entry-level position.

In South Korea the wage gap is greater than in Japan even though executive pay is less, because workers' pay is so much lower. Gerald Williams, Towers Perrin's general manager for northeast Asia, estimates that Korean executives make 15 to 25 times the average national wage. Years of service are more important than quality of service in determining pay for younger employees. Performance becomes more important for managers over 35. One big exception: Koreans are handsomely rewarded if they have worked or studied abroad and have acquired technical expertise that cannot yet be found at home.

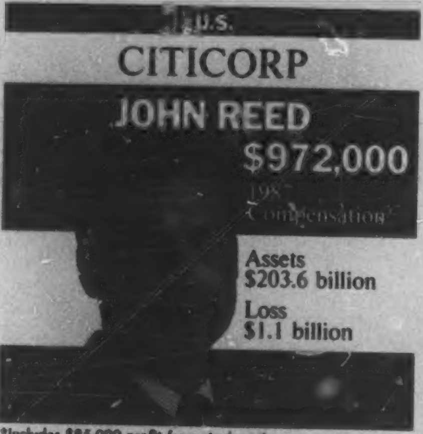
There are no hotshots brought in to turn around a flagging Japanese enterprise.

Income taxes tend to discourage high salaries. Marginal rates run as high as 70% in South Korea and 76% in Japan. Tak Niida, director of business development at Cambridge Hewitt International, a management consulting firm in Tokyo, notes that if a company raises an executive's salary, "the money goes to the tax officers, not to the manager." Thomas Nevins, managing director of the headhunting firm TMT Inc., tells of a Japanese executive hired away from a domestic corporation to head the Tokyo branch of a European outfit. Because of taxes, the man opted for a seat on the board of directors rather than an extra $150,000 per year.

Expense accounts, houses, cars with drivers, and memberships at prestigious golf clubs are ways around the tax man, especially in Japan. So is the lump sum paid at retirement. Tax deductions increase with length of service, to reward dedicated employees.

In freewheeling Hong Kong, the pay structure is more fluid. Big performance-based bonuses are common. Headhunters and compensation experts say chief executives can earn as much as $750,000 a year when business booms. Then there are the perks: club memberships, a car and driver to get around the pocket-size British colony, and a fine house—usually complete with servants—overlooking the bustling harbor.

Stock options or other forms of deferred compensation, however, are not popular. Says Robert Muschewske, regional managing director for Hay Management Consultants: "The attitude is, 'I want the money now.'" Hong Kong reverts to the People's Republic of China in nine years, and nobody is taking the long view. **– Sally Solo**



DEBORAH FEINGOLD—OUTLINE

*Includes $85,000 profit from stock options.

cause of onerous tax laws. While bonuses at the big manufacturers and banks seldom exceed 40% of salary, aggressive companies in such businesses as publishing and retailing are jacking up the limits. At Bertelsmann, the $4.7-billion-a-year publishing house, top executives can earn up to 60% of their salary in bonuses. Last year a fat bonus helped lift the compensation of Bertelsmann's chief executive, Mark Wössner, to around $1.7 million.

A pay revolution is shaking Britain. Prime Minister Margaret Thatcher's bracing brand of capitalism brought not just tax cuts and high profits but also a profound change in public attitudes. Big pay packages are no longer frowned upon. High-paid executives have been transformed from robber barons to folk heroes. Says Young of Thorn EMI: "The new managers simply want to perform well and be rewarded for it. They aren't ashamed of what they earn."

American-style bonus plans tied to performance are proliferating. At Woolworth, a onetime British subsidiary of the American retailer that is now independent, Chief Executive Geoffrey Mulcahy should receive an estimated $510,000 on top of his salary of some $340,000, assuming the company's profits live up to projections. Mulcahy's contract awards him 1.5% of base pay for every $1.7 million in operating profit the company makes over $94 million.

Britain's biggest bonus winner is Christopher Heath, 42, managing director of Baring Securities, a London firm that sells Japanese stocks to European clients. Heath's base salary comes to just $220,000, with bonuses tied to how well he performs. In Heath's case the performance has been nothing short of sorcerous. He has multiplied net earnings some 25 times in four years, to $50 million. The surge in profits produced a bonus of almost $4 million in 1986, or 18 times his salary. Last year, according to one estimate, Heath's compensation soared to over $6 million.

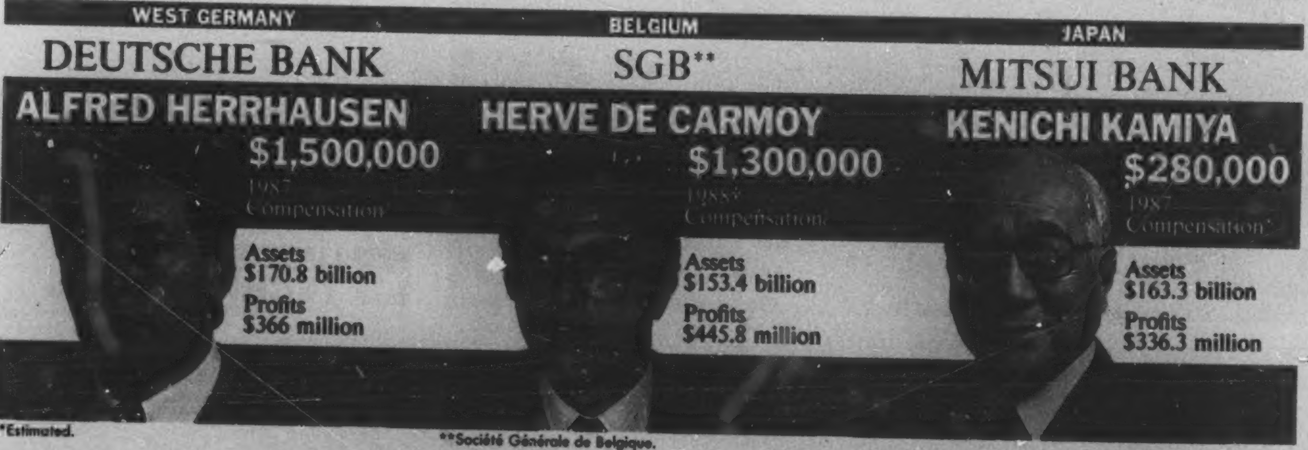
When the news of this bounty broke, dozens of TV and newspaper reporters camped out in front of Heath's Kensington home—for he was judged to be Britain's highest-paid boss and was therefore an instant celebrity. The tone of the coverage demonstrated how much attitudes have changed in the past decade. Heath was portrayed as a laudable entrepreneur, not as some kind of Ebenezer Scrooge. Because he thought the attention would be good for his firm, he even posed for photographers at home while petting his dog. Britons have learned, though, that performance-based bonuses cut two ways. When Cable & Wireless's earnings dropped this year, so did Sir Eric Sharp's pay. The chairman earned $350,000, down 19% from the previous year.

Along with fat bonuses, Britain has begun offering that other ticket to fortune—stock options. Rights to buy shares on a future date at a fixed price, usually the price prevailing when they are granted, options can be fabulously lucrative if the share price rises sharply by the time they can be exercised. Thanks to new tax breaks, the granting of options took off in 1985, but since they must be held at least three years, few have been exercised so far. When the big cash-out comes, executives should reap handsome gains. On average, stock options granted in 1985 are now worth 120% to 150% of an executive's annual salary.

FRANCE is about where Britain was a few years ago. Nationalized companies are notoriously tight. With a salary of about $150,000, Air France's newly appointed president, Bernard Attali, earns less than many of the line's pilots. Nor are private-sector companies always more generous. Automaker Peugeot and tire manufacturer Michelin are both controlled by families who don't believe in bonuses or options.

The heads of the big French banks—Société Générale and Crédit Lyonnais, for example—often earn less than the men running the French subsidiaries of Bankers Trust, Citibank, or other U.S. competitors. Says Eduardo de Martino, managing partner in France of H.R.C. Wyatt Co., a U.S. compensation specialist: "By global standards, French bankers are way underpaid."

In time a surge in stock options in France should change this picture radically. Options appeal to French conservatives and Socialists alike. Even though he admits to little interest in money himself, Le Floch-Prigent, the former chief of Rhône-Poulenc and a Socialist Party member, says: "It is essential for the employees to profit from their company's good performance." Stock options are potentially more lucrative in France than in Britain and the



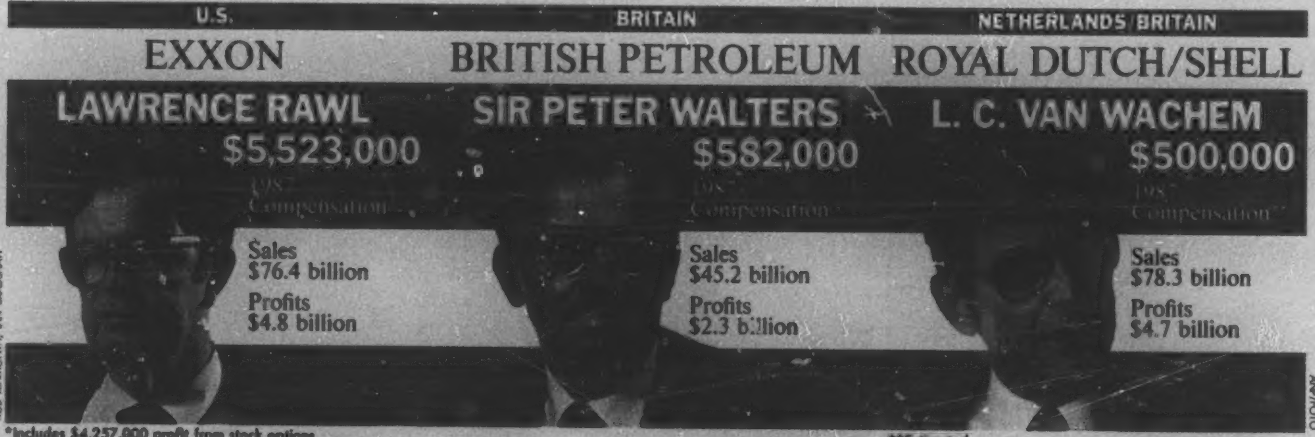
NORBERT NORDMANN, LE NOUVEL ECONOMISTE

*Estimated.

**Société Générale de Belgique.
†Elected CEO September 1988

U.S. Companies can effectively grant unlimited amounts of options to buy shares five years hence at a price 20% below today's. The gains are virtually tax-free.

Among companies that have recently launched stock option plans are electronics manufacturer Matra, luxury-goods producer Moët Hennessy Louis Vuitton, and weapons maker Thomson-CSF. The scheme at Thomson covers more than 150 managers. They receive options to buy stock worth several times their salaries, or more than $1 million in shares for top executives. Says Pierre Roussel, Thomson's director of human resources: "Since last year stock options have made compensation in France far more alluring."



ROB KINMONTH, IAN BRADSHAW

ANP/FOTO

*Includes $4,257,000 profit from stock options.

**Estimated.

Compensation packages across Europe should keep growing—and keep growing more alike—as cross-border bidding for talented executives intensifies. The City of London is packed with Americans earning Wall Street salaries. Drug and cosmetic company Beecham Group came up with a mouthwatering deal in 1986 to lure Robert Bauman from the U.S. electronics maker Textron to become its chief executive. Bauman's annual earnings now top $1.2 million. This year Beecham raided U.S. competitor Sterling Drug to recruit James Andress as head of its worldwide pharmaceutical business.

In a cross-border bank raid, Société Générale de Belgique, the Belgian holding company recently acquired by French bank Cie Financière de Suez, went to London for a new president. It recruited Hervé de Carmoy from a top post at Midland Bank. Carmoy reportedly got a pay package worth some $1.3 million, stunning for a banker in Continental Europe. That put him ahead of Citicorp's John Reed, whose pay sagged in 1987 along with his bank's performance. Because Citicorp had a $1.1 billion loss for the year, Reed and other top executives got no bonuses at all. Reed earned $887,000. He also got $85,000 for exercising stock options. Before Carmoy gets too excited, though, he should take note of what else Citicorp gave Reed. During the year Reed was granted a total of 85,000 restricted shares of Citicorp stock. Based on recent stock prices, the shares have a value of about $2 million.

Companies that do not match the world scale on compensation face two kinds of problems. If they are headquartered in historically low-paying countries and stick with local pay standards, their best managers may set sail for places like the U.S., where pay is higher. In addition, executives from these companies who work abroad may earn more than their superiors back home. The man who runs British Petroleum's American subsidiary, for example, makes $1 million a year, about 40% more than BP's chairman, Sir Peter Walters.

THESE PROBLEMS have driven a handful of European companies to match compensation with competitors anywhere in the world. Hanson PLC, the British conglomerate with holdings ranging from chemicals and hot dogs to bricks and tobacco (see Dealmakers), is a prime example. With over half its sales in the U.S., Hanson is staffed with executives adept at managing on both sides of the Atlantic. Two years ago the company was on the verge of losing managers to higher-paying American competitors. Says vice chairman Martin Taylor: "Our people in Britain were being approached. To keep them from being tempted away, we moved to a global pay scale." Hanson raised salaries sharply for more than a half dozen top executives. British Petroleum is gradually raising its meager pay scales to be more in line with the world oil industry. It is boosting salaries for top executives, has sweetened its stock option plan, and has substantially increased the maximum bonus.

As these changes take hold, returning home isn't quite the sacrifice it used to be for European executives who have worked in America. In 1980 Pasquale Pistorio—then the $170,000-a-year head of the international semiconductor division at Motorola in Phoenix—returned to his native Italy, where he was moved down to a $135,000 salary to rescue state-owned semiconductor producer SGS. "All I got was an armored car and a pay cut," says Pistorio. But when SGS and the semiconductor subsidiary of France's Thomson-CSF merged last year to form SGS-Thomson, Europe's second-largest chipmaker behind Philips, Pistorio got a raise. The owners, Thomson and the Italian government, decided that Pistorio should be paid closer to international standards. Last year his pay increased to more than $200,000, a figure that should grow if the company implements a bonus plan it has been considering.

Pistorio deserves the money. Descended from a line of Sicilian farmers, he works from 8 A.M. to 9 P.M. and has taken one week's vacation in two years—at a hotel in Sicily adjacent to one of his plants. "In Europe," he says, "we still don't have the same crazy spending for executives as in the U.S." Europe may never hit U.S. heights. But for the first time it is rewarding the mixture of vision and talent, guts and sweat that makes a great manager. F

BRINGING BIOTECH DOWN TO EARTH

Suddenly the hot companies that make wonder drugs face formidable competition in the race from research lab to market. They had better learn to make pills. ■ *by Gene Bylinsky*

WALL STREET is sending a persistent message to its onetime favorites, the health biotech companies: You don't have the kind of future you thought you had. Some of you figured you would turn into the next $1 billion giants, but now the going will be lots tougher and you will have to get a lot smarter. Prudential-Bache reports that biotech stocks have underperformed the market by about 30% in the past three months. Genentech, the favorite of favorites, fresh from first-year sales of $180 million in its anti–heart attack drug, t-PA, has seen its stock sag from a lofty $51.75 before t-PA to around $17.

The sudden lack of investor interest puzzles many biotech leaders. While conceding that t-PA sales have slowed—indeed, the company has suspended production—Genentech CEO Robert A. Swanson still insists: "Biotechnology is one of the most exciting technologies in the world today. It is young and it is growing rapidly."

One who isn't puzzled, however, is George B. Rathmann, chairman of Amgen Inc. He sees beyond the two hot drugs Amgen has in the making to a daunting challenge ahead—finding a lasting niche in the business. The game is changing rapidly just as the major pharmaceutical houses, passive in the field until recently, are charging in and threatening their smaller competitors.

Rathmann and other close observers of the industry think biotech companies must translate their exotic discoveries into medicines that can be mass marketed as pills rather than, as has heretofore been the case, administered only as injections. In doing so they must wed their technology with the old-line pharmaceutical industry's art of making synthetic chemicals. And they must do it without losing all their markets to those companies.

REPORTER ASSOCIATES *Alicia Hills Moore, Kate Ballen*

BILL NATION—SYGMA

Flanked by fermentors, Amgen CEO Rathmann waits for FDA approval of his new drug, EPO.

The industry is a long way from meeting that challenge. Biotech companies have cloned some of the most obviously useful molecules—insulin, growth hormone, t-PA, and Amgen's potential blockbuster drug for treating chronic anemia, erythropoietin (EPO), which awaits imminent FDA approval. Coming up with the next round of exclusive molecules will be tougher. Human biochemistry is proving more complex than some scientists thought, frustrating efforts to develop useful products. Patent battles threaten some biotech companies. Most important, the infant industry lacks the research breadth, financing, and experience of the major pharmaceutical producers needed to merge synthetic chemistry with genetic engineering.

Genetic engineering sprang from scientists' discovery of the structure of DNA (deoxyribonucleic acid), the molecule that controls heredity. By inserting a gene responsible for producing a specific protein, such as insulin, in bacteria or animal cells, the companies have mass-produced these substances and sold them as medications. On an even more basic level, by studying the interaction of molecules in the body, biotechnology has shed new light on disease and how the body fights it.

SYNTHETIC chemistry, on the other hand, uses a Tinkertoy approach to constructing molecules. Scientists try out the new substances in lab dishes or on animals to test their activity against diseases. Putting the two sciences together involves improving the production of synthetic material by using the insights that biotech provides about the properties of certain molecules.

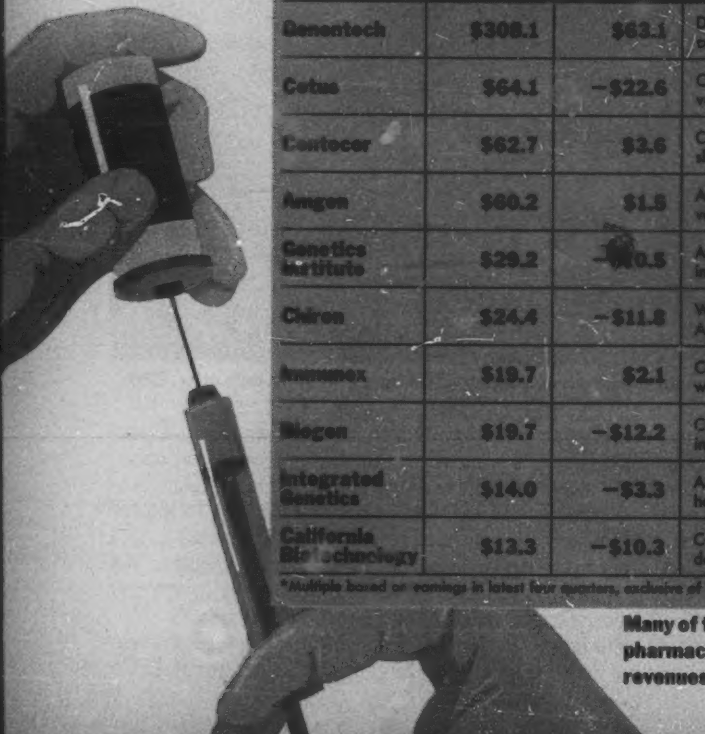
The size of the molecules is important. Molecules produced through genetic engineering are large, just as naturally occurring ones are large, and can't be administered to patients orally because they won't get through the stomach walls and other filtering organs. They must be injected directly into the bloodstream by doctors or nurses, vastly reducing the size of the potential market. Synthetic molecules, which are less complex, can be made much smaller.

Big pharmaceutical producers already have plunged more deeply into linking biotech with the pill business than is generally recognized. Rathmann calls this the "biggest black cloud" on the small companies' horizon. For years the giants have been tapping into the skills of biotech outfits by concluding research and marketing agreements that usually favored the large corporations but allowed the small fry to survive. The big companies have been convinced that if they waited for biotech to mature, they would be able to avoid some research expense and still step in to reap the rewards.

"There's a phenomenal amount of R&D in the biotech field occurring at the big companies that you don't hear about on the outside," says Robert Kupor, who analyzes the industry for the Seattle investment firm Cable House & Ragen. "Biotech companies can't hope to match that."

One of the pioneers among the major drug producers is Eli Lilly. It has built a biotech staff of 500 in Indianapolis. In addition, it has expanded Hybritech, a company it acquired in 1986, into a 1,400-employee enterprise, putting it in a league with Genentech, which employs 1,800. Says Lilly research vice president Irving S. Johnson: "We're about to enter a golden age of drug development. We come with a broader understanding of biology and medicine than the young biotech companies. We're more apt to be thinking in strategic terms." He believes that the survivors among the biotech companies will be those that go beyond just cloning to produce drugs and use that technology to develop medicines with broader uses.

The biotech companies, in some respects to their credit, are more research oriented than market driven. Genentech, for instance, for many years pursued, without much success, an elusive substance called tumor necrosis factor (TNF) as a possible anticancer agent. But TNF appears to have deleterious effects in the body in some situations. It is, for instance, one of the substances released in rheumatoid arthritis that destroys tissue in the joints. The big



IT'S TOUGH TO SUCCEED WITHOUT PRODUCTS

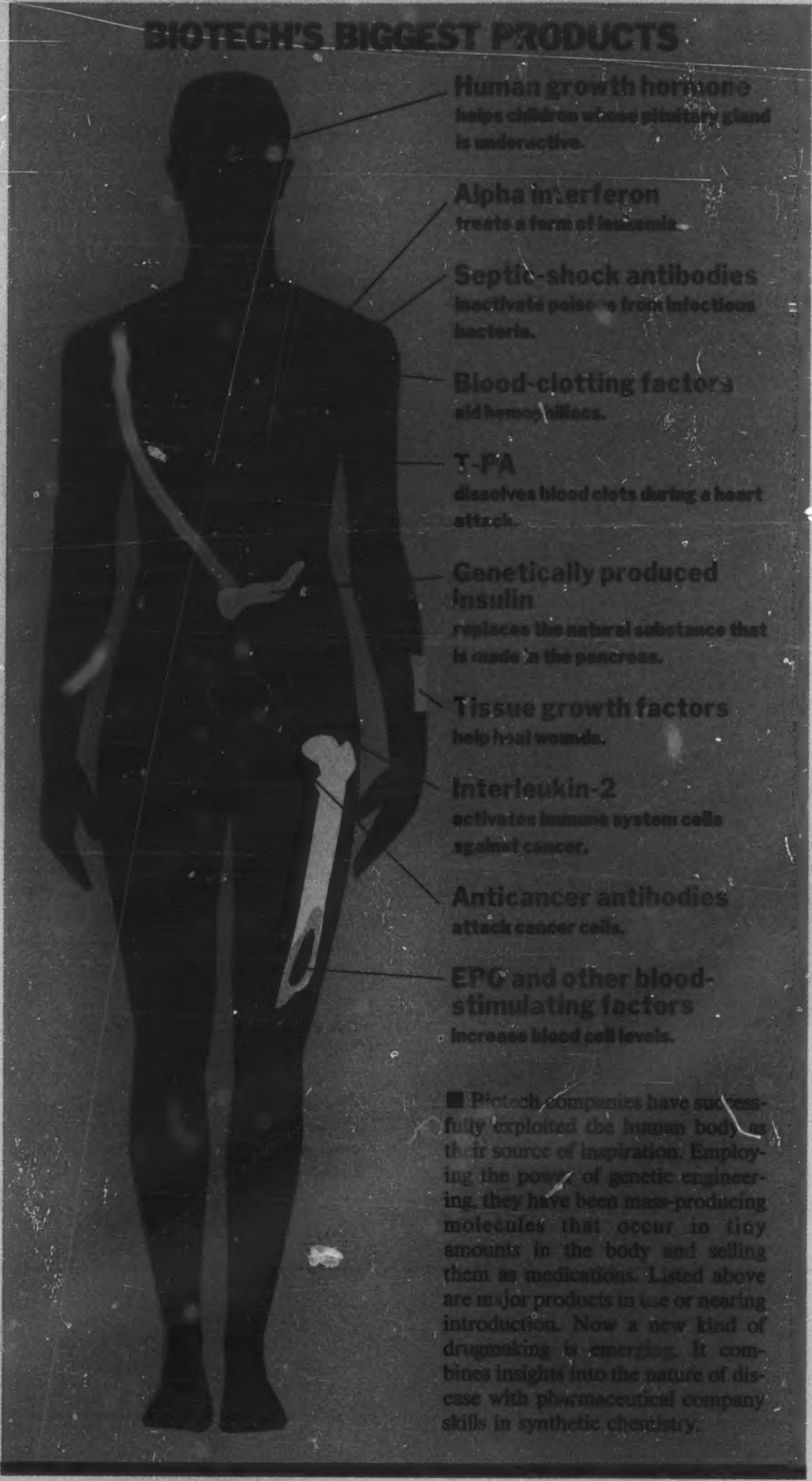
COMPANY	REVENUES latest four quarters in millions	NET INCOME in millions	MAJOR DRUG AREAS	R&D SPENDING in millions	STOCK PRICE RANGE last 12 months	RECENT PRICE P/E multiple*
Genentech	$308.1	$63.1	Diabetes, growth deficiency, cancer, AIDS, heart attack	$111.3	$16.125–$51.25	$16.75 23
Cetus	$64.1	−$22.6	Cancer, AIDS, hepatitis B vaccine	$51.2	$9.50–$22.875	$10.25 N.A.
Centocor	$62.7	$3.6	Cancer, blood clots, septic shock	$31.6	$17.00–$36.50	$21.25 69
Amgen	$60.2	$1.5	Anemia, cancer, hepatitis B vaccine, wounds, infections	$41.8	$16.00–$36.25	$31.125 346
Genetics Institute	$29.2	−[illegible]0.5	Anemia, hemophilia, cancer, infection	$36.3	$13.75–$31 25	$15.375 N.A.
Chiron	$24.4	−$11.8	Wounds, burns, bone growth, AIDS, hepatitis B vaccine	$29.7	$8.75–$25.00	$17.50 N.A.
Immunex	$19.7	$2.1	Cancer, infectious disease, wounds, rheumatoid arthritis	$11.0	$9.375–$21.75	$13.125 53
Biogen	$19.7	−$12.2	Cancer, AIDS, tissue and joint inflammation	$22.3	$3.75–$9.625	$8.00 N.A.
Integrated Genetics	$14.0	−$3.3	Anemia, hepatitis B vaccine, heart attack	$13.5	$3.375–$10.75	$3.875 N.A.
California Biotechnology	$13.3	−$10.3	Cardiovascular disease, drug delivery	$15.8	$4.75–$10.75	$5.375 N.A.

*Multiple based on earnings in latest four quarters, exclusive of nonrecurring items.

Many of these health biotech companies hope to emerge soon as full-fledged pharmaceutical firms. With the exception of Genentech, however, all of them derive revenues mainly from research contracts and bank interest, not sales.

ILLUSTRATIONS BY STEVE JENKINS

BIOTECH'S BIGGEST PRODUCTS


Human growth hormone
helps children whose pituitary gland is underactive.
Alpha interferon
treats a form of leukemia.
Septic-shock antibodies
inactivate poisons from infectious bacteria.
Blood-clotting factors
aid hemophiliacs.
T-PA
dissolves blood clots during a heart attack.
Genetically produced insulin
replaces the natural substance that is made in the pancreas.
Tissue growth factors
help heal wounds.
Interleukin-2
activates immune system cells against cancer.
Anticancer antibodies
attack cancer cells.
EPO and other blood-stimulating factors
increase blood cell levels.

■ Biotech companies have successfully exploited the human body as their source of inspiration. Employing the power of genetic engineering, they have been mass-producing molecules that occur in tiny amounts in the body and selling them as medications. Listed above are major products in use or nearing introduction. Now a new kind of drugmaking is emerging. It combines insights into the nature of disease with pharmaceutical company skills in synthetic chemistry.

companies are directing their TNF research toward blocking production of the substance during the disease. Success might lead to an antiarthritis pill with huge market potential.

Only a few biotech companies have so far recognized the importance of the fusion of genetic engineering and synthetic chemistry and taken steps to capitalize on it. In a joint venture with Kodak, Immunex of Seattle plans to use the findings of molecular biology to design synthetic molecules that either mimic a desirable activity in the body or block a damaging one. For example, Immunex is seeking ways to employ genetic engineering to mass-produce part of a synthesized molecule that prevents damage caused by arthritis.

Chiron of Emeryville, California, has just started a five-year collaborative drug-design program with Warner-Lambert. The two companies will share their respective skills to develop a new generation of anticancer and central nervous system drugs. This marks Warner-Lambert's entry into biotech. Chiron President Edward E. Penhoet says: "This combination of skills for a focused drug-discovery program represents a model for future partnerships between leading pharmaceutical companies and leading biotechnology companies. It signals a new stage in pharmaceutical development, even more promising than basic recombinant biotechnology."

BIG MARKETS aside, the health biotech companies remain on the cutting edge of molecular biology as it applies to the human body. And industry leaders are still optimistic that their research into the basic causes of disease will produce products and profits. Genentech may yet realize as much as $250 million a year in sales of t-PA, despite competition from other products. That's not bad except in comparison with the $1 billion some security analysts were once predicting, with no discouragement from the company.

The table on page 160, however, shows how far even the leaders have to go to gain real presence in the market. Of the top ten in revenues, only Genentech is selling products in volume. The rest still derive most of their revenue from R&D contracts with big companies and interest on money raised by going public and still in the bank. The chart on this page defines some of the most promising products and their uses in treating patients. As vital as they may be in curing or preventing disease, many of these products could prove to have more humanitarian than financial value—at least in relation to the grandiose expectations some investors have had for them.

PRODUCT announcements have slowed considerably in the past two years. The main problem is that science is taking longer than most people expected to work through the maddening complexities of the processes and molecular interaction within the human body. At first scientists thought, for instance, that there was just one interferon molecule that the body produces to battle infection. Now they have counted 19, with striking variations among them. To compound the mystery, each molecule can have a number of activities within the body, some good and some bad. David Botstein, Genentech's vice president for science, frets about such molecules: "We can make them, but their use isn't obvious."

At present, in addition to t-PA, Genentech is selling more than $100 million a year of human growth hormone and collects royalties from licensing the production and marketing of insulin and a type of interferon. Products under development include Relaxin, which eases childbirth; one of the many types of interferon; and a number of still secret possibilities. None of these appears to hold the volume potential of t-PA, and none is expected on the market for three or four years.

Rathmann of Amgen believes his company may be the only one to introduce two big drugs in the next two or three years. One is the chronic anemia drug EPO, which stimulates red blood cell production and could produce sales of up to $100 million in its first year. The other, which is in an earlier development stage, stimulates production of white cells and has shown promise in allowing cancer patients to withstand higher than normal doses of conventional chemotherapy. Amgen's stock reflects these prospects. After falling from $36 to $16 in the market break last year, the price has rebounded to hold in the $30-to-$32 range.

ANDY FREEBERG

Centocor's Schoemaker wants to buy a bigger company.

In terms of pure discovery, the small biotech companies continue to be formidable. Their size makes it easier to move faster. Cetus, the 17-year-old industry graybeard, still has no significant products on the market, though it hopes to have an anticancer agent by 1990. But Cetus scientists have come up with a more precise technique for locating foreign molecules such as the AIDS virus and traces of cancer. The technology will be sold in joint ventures with Kodak and Perkin-Elmer.

Another area in which small companies have pioneered is monoclonal antibodies. These proteins are produced by the body to fight infection. What sets them apart is their specificity in seeking out targets. Improving on nature, companies such as Centocor and Xoma are rushing to market monoclonal antibodies designed to combat septic shock, a sometimes fatal infection acquired in hospitals. The antibodies inactivate toxic molecules released by the infectious bacteria.

GEORGE STEINMETZ

Cal Bio's Casey thinks novel drug-delivery techniques will help his company find a niche.

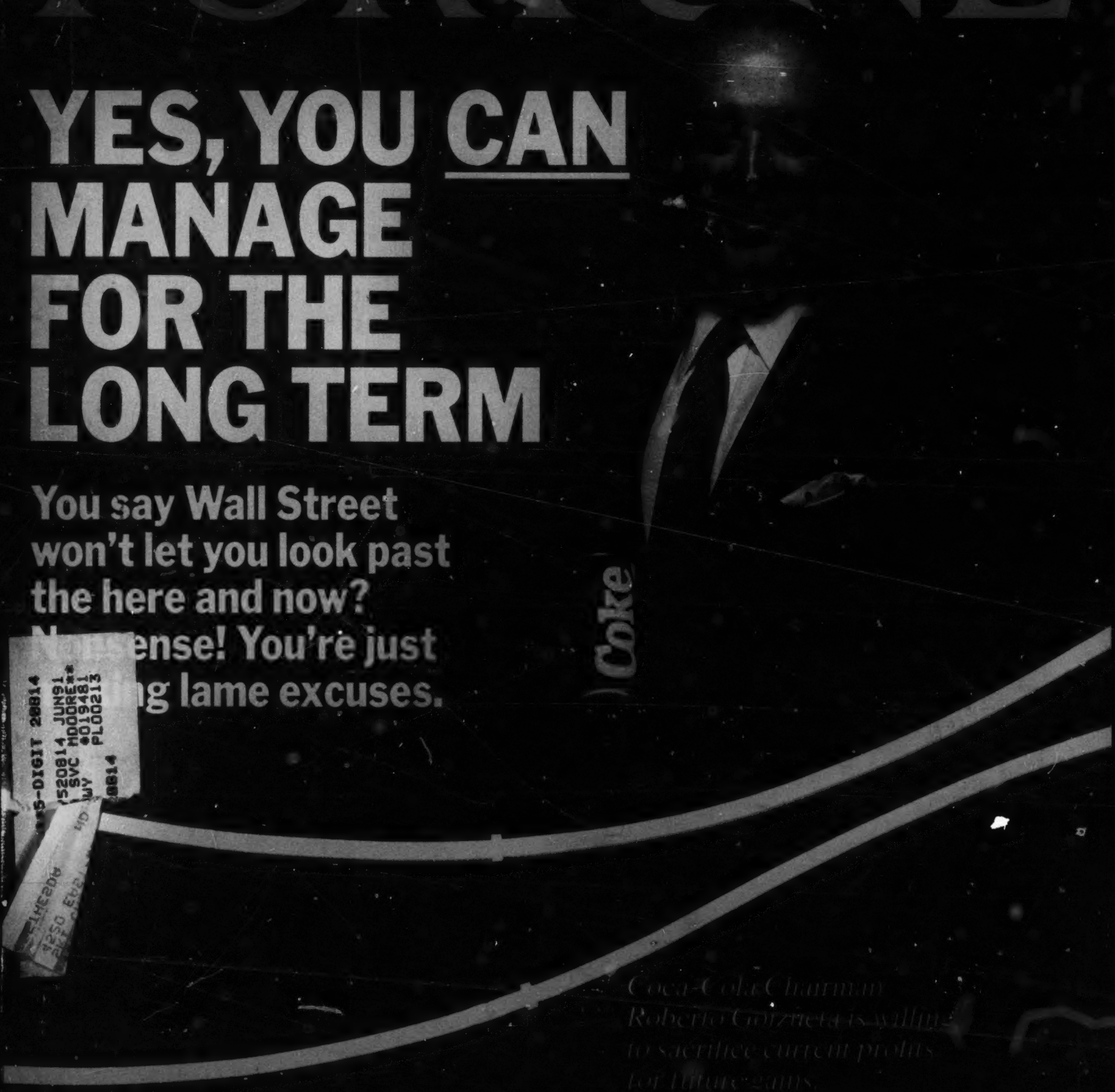
Even when biotech companies develop a marketable product, however, another hurdle often faces them: patent litigation. Amgen and Genetics Institute, another public company, are suing each other over EPO. Amgen has the patent on producing the molecule; Genetics Institute has the patent for first isolating it. Several companies are contesting the rights to Interleukin-2, a cancer fighter.

Such uncertainty is sure to drive some companies into the arms of bigger, older competitors. Hubert J.P. Schoemaker, the ebullient chairman of Centocor, would like to turn the expected acquisition game around. "People on Wall Street tell us that small fish can eat big fish," he says. Others bank on staying independent by finding an unusual niche in the crowded pharmaceutical industry. Richard Casey, president of California Biotechnology, has a strategy of delivering biotech proteins in novel ways, such as insulin through a nasal spray. Eventually, Casey thinks, this strategy will pay off. The big payoff will be for those companies that accept the new competitive reality and combine the exotic with a little of the mundane. ■

HUGEST DEALS EVER • HOW TRUMP TRIUMPHS • JAPAN'S U.S. SHOPPING LIST

NOVEMBER 21, 1988 $3.50

FORTUNE



YES, YOU CAN MANAGE FOR THE LONG TERM

You say Wall Street won't let you look past the here and now? N ense! You're just g lame excuses.

5-DIGIT 20814
520814 JUN91
SVC MOORE**
WY #0194B1
PL00213
0814

Coca-Cola Chairman Roberto Goizueta is willing to sacrifice current profits for future gains.

NOVEMBER 21, 1988

FORTUNE

ROB NELSON—PICTURE GROUP

Coke's *long-term* future is a more powerful force in driving the stock up than its near-term profits.
COVER STORY/PAGE 64

COVER: Gregory Heisler photographed Coca-Cola Chairman Roberto Goizueta at the company's headquarters in Atlanta.

MANAGING/Cover Story

YES, YOU *CAN* MANAGE LONG TERM 64
Executives complain that Wall Street won't let them look past the here and now. But they're just making lame excuses. The truth is the opposite: Investors love the future. *by Gary Hector*

MONEY & MARKETS

WHO WINS IN THE HUGEST DEALS? 81
Philip Morris wants to grow by takeover, RJR wants to shrink by going private. Wildly different strategies—and results. *by Bill Saporito*

CEO POLL

CEOs VIEW LIFE AFTER THE ELECTION 95
In a FORTUNE 500/CNN Moneyline survey, they say Bush would bring rising stocks and business expansion. Not Dukakis. *by Faye Rice*

ENVIRONMENT

HERE COMES THE BIG NEW CLEANUP 102
Americans are again declaring war on pollution. It calls for fresh, market-oriented approaches, not the old rigid regulations. *by Jeremy Main*

MR. CLEAN TALKS ABOUT PICKING UP THE GARBAGE 110

ENVIRONMENTAL ANXIETY GOES GLOBAL 118

CORPORATE PERFORMANCE

WHY FORDS SELL LIKE BIG MACS 122
To stay ahead, Ford is using a streamlined procedure to cook up new models. *by Alex Taylor III*

AMERICA'S BEST DESIGNS 129
Europe remains the leader, but ten products suggest that the U.S. is gaining. *by Brian Dumaine*

FIVE PRODUCTS U.S. COMPANIES DESIGN BADLY 130

VOL. 118, NO. 12

"We hope [the Japanese] will learn how to express their inner emotions—without the aid of a calculator."

PAGE 8

"It's not to the benefit of the shareholders. Kraft has good quality earnings but so do Treasury bills."

PAGE 81

"I think investors will be much more optimistic if Bush is elected."

PAGE 95

"The First Law of Garbage is [that] everybody wants you to pick it up, and nobody wants you to put it down."

PAGE 102

"Other people are schmucks. I am not a schmuck."

PAGE 145

"Hispanics may *choose* not to assimilate, but not because they *cannot*."

PAGE 181

PROFILE

WILL DONALD TRUMP OWN THE WORLD? 145

No, but he's trying. His business holdings could already be worth over $2 billion. An inside look at his operations reveals how he does it: Key elements include shrewd use of copious debt and astonishing chutzpah. *by Monci Jo Williams*

POLITICS & POLICY

CHILD CARE: WHAT WORKS—AND DOESN'T 163

Helping parents pay the babysitter makes sense if it improves the bottom line. Some 3,500 companies now offer day care benefits. The federal government gives a hand too, but it should stop subsidizing the well-off and do more for the poor. *by Jaclyn Fierman*

SELLING

IF YOU WANT A BIG, NEW MARKET . . . 181

Try reaching U.S. Hispanics. They're 19 million strong, with $130 billion to spend. Here's how to woo this fast-growing ethnic group—and avoid embarrassing mistakes. *by Julia Lieblich*

HISPANICS: JUST ANOTHER IMMIGRANT STORY? 188

by Linda Chavez

COMPETITION

HOW JAPAN WILL SPEND ITS CASH 195

Talk about a shopping spree: Together the Japanese industrial giants have accumulated $60 billion. In their boardrooms, directors are hatching plans for all that money. Your company could be on their list. *by Carla Rapoport*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 8

The networks' humbler pie, how CEOs would raise taxes, Japan's funny import, Hush Puppies in Bulgaria, endangered newspapers, and more.

FORTUNE FORECAST 45

GNP growth is slowing, but that doesn't mean your worries about inflation are over. *by Maureen F. Allyn*

PERSONAL INVESTING 49

How to spot takeover stocks before the buyout bids are made. *by Andrew Evan Serwer*

Also: An education play, single-premium life, and Portfolio Talk with Robert Hoerle.

COMPANIES TO WATCH 132

FORTUNE PEOPLE 203

Michael Milken's press agent, Jim Lebenthal's 90-year-old mom, and more. *by Stephen Madden*

ON THE RISE 204

BOOKS & IDEAS 209

Brooks Jackson tells all about a masterly milker of PACs. *by William Lilley III*

LETTERS TO FORTUNE 213

OFFICE HOURS 217

Leaders sometimes take companies over the edge. Are they really necessary? *by Walter Kiechel III*

KEEPING UP *by Daniel Seligman* 223

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Ray Cave
CORPORATE EDITOR Gilbert Rogin

MAGAZINE GROUP
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr.,
S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr.,
Michael J. Klingensmith, Richard B. Thomas

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS
Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck,
Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer,
Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr.
(European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis,
Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre,
Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig,
Rosalind Klein Berlin, Vivian Brownstein, John J. Curran,
Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss,
Brian Dumaine, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes,
Catherine Comes Haight, Gary Hector (Menlo Park, California),
Ronald Henkoff, Christopher Knowlton, Andrew Kupfer,
Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar,
John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles),
Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice,
Louis S.Richman, Bill Saporito, Lenore Schiff, Patricia Sellers,
Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris),
Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, Kate Ballen, J.B. Blank,
Susan Caminiti, Carol Davenport, Darienne L. Dennis,
Alan Deutschman, Alan Farnham, Carrie Gottlieb, Constance A. Gustke,
Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama,
David Kirkpatrick, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich,
Stephen Madden, Joshua Mendes, David J. Morrow, Karen Nickel,
Terence P. Paré, Edward Prewitt, Charles A. Riley II, Ellen Schultz,
William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo)
ART STAFF Renee Klein, Leo F. McCarthy (associate directors),
Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman,
Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant
picture editors), Maureen Duffy Benziger, Christopher E. Green,
Todd James
EDITORIAL OPERATIONS Donald G. Biglands (manager),
Carol Gwinn (copy chief), Charles Blackwell (deputy),
J. Randall Sizemore (technology chief), David Sloan (deputy),
Karen Andrews, Charles J. Attardi, Leslie Brenner,
Leon A. Douglas, Edith Firoozi Fried, Anne Glusker,
George J. Habit, Scott Kelliher, Daniel Lawrence,
Michelle Lockhart, Frances Owles, Mary Alice Rudovsky,
Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Maureen Mallon Cluen (director),
Guy Gleysteen (assistant manager)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Michael J. Clayton

U.S. ADVERTISING SALES DIRECTOR John E. Haire
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

TOM ZIMBEROFF

Gary Hector with his acclaimed new book

YOU HEAR the complaint all the time: America's financial markets are so relentless in demanding short-term performance that they're strangling innovation, vision, anything that doesn't pay off right now. It's not just a problem, some executives say—it's the worst problem facing U.S. business.

That is a charge worth investigating, and what better person for the job than associate editor Gary Hector? He had just finished writing our recent article on how the stock market digests information and sets values. In this issue, Hector's examination of the short-term mania theory, conducted with reporter Wilton Woods, is the cover story (page 64). To report it, Hector visited companies in Chicago, Pittsburgh, and Los Angeles. His well-documented conclusion: Contrary to popular wisdom, investors look remarkably far into the future and are generally willing to indulge a company's gutsy moves if the long term looks promising.

Hector's career is in high gear. Besides writing for FORTUNE, he is crisscrossing the country promoting his book *Breaking the Bank* (Little Brown, $18.95). Critics have unanimously praised this fascinating tale of the collapse of BankAmerica, once the world's largest and most profitable bank. The *Wall Street Journal* called the book a "richly detailed, brisk, and colorful account that should be required reading for the high and mighty of American business and industry." FORTUNE readers enjoyed an early excerpt in the issue of June 6, 1988.

Since becoming a journalist 12 years ago, Hector has often distinguished himself. He won the prestigious Gerald Loeb Award for a series on Chrysler's debt renegotiations when he wrote for *American Banker*. In six years at FORTUNE, he has written a cover story on Citicorp, a profile of J.P. Morgan & Co., and two BankAmerica articles, among many others. Hector says he was fascinated for some time by the inaction of the bank's directors. "FORTUNE was asking in 1985 if Samuel Armacost, then chief executive, was the right man to head the bank," recalls Hector. "The board did not get around to asking that question until 1986."

FORTUNE
MASTERS OF THE BUYOUT GAME
FORTUNE
AMERICA'S TOUGHEST MARKETING MAN

Early covers: KKR and Ross Johnson

FORTUNE readers were especially well prepared to assess the new battle over RJR Nabisco, which could yield the biggest deal ever. The principals—RJR Nabisco chief Ross Johnson and KKR, the leveraged-buyout firm—were subjects of successive cover stories. Carol J. Loomis's intimate examination of the secretive KKR in our July 4 issue revealed the astonishing fact that the firm commanded $40 billion, enough to buy two Texacos. Bill Saporito's profile of Johnson in the July 18 issue explained why Johnson is known as an "ultimate corporate master blaster." Those observations resonate in today's headlines and in Saporito's own look at the duel—as well as at Philip Morris's bid for Kraft—beginning on page 81.

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by Time Inc. Time Inc. principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. N. J. Nicholas Jr., President; Kevin D. Senie, Treasurer; Philip R. Lochner Jr., Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, FL 33630-0604. © 1988 Time Inc. All rights reserved. FORTUNE is a registered mark of Time Inc.

The Business Council's members include diehards who are opposed to *any* increase. As an ally they have the Coalition for Fiscal Restraint, whose corporate members include **Sears**, **Armstrong**, and **Amway**. Michael Monroney, the group's chairman, hopes that tax-prone corporate chiefs will soon come back to the resisters' fold. "We will be talking to some bell cows now," he says.

Other chairmen and chief executives who still feel that a tax increase is unnecessary held out some of the ways they'd go if pushed against the wall. Among their proposals:

- Tax what people spend, not what they earn, says Ruben Mettler of **TRW**.
- Increase excise and consumption taxes on liquor, tobacco, and gasoline, says Paul Oreffice of **Dow Chemical**.
- Introduce a value-added tax, say George Keller of **Chevron** and David Roderick of **USX**.
- Raise the gasoline tax 25 cents per gallon, says John Reed of **Citicorp**.

Trade associations are already priming their lobbyists to look out for their special interests when Congress convenes January 3, and are forming new and sometimes surprising alliances in the process.

Opposing Reed's gasoline tax proposal are both the American Automobile Association and the American Trucking Associations (traditionally in philosophical gridlock over who should be on the roads). Even Big Oil's American Petroleum Institute and the smaller producers' Independent Petroleum Association of America, often at loggerheads, find themselves on the same side. Both hate the idea of additional gas taxes. – **Cynthia Hutton**

THE STRAIGHT-A CLUB

■ As everyone knows, Groucho Marx is credited with sneering, "I wouldn't want to belong to any club that would accept me as a member."

Some blue-chip corporations seem to have the same attitude. The members of the AAA club have earned their exclusive credit ratings from Standard & Poor's because their bonds, and their companies, are supposed to be safe. But with record-setting deals for such giants as Kraft and RJR Nabisco in the works (see Money & Markets), even AAA companies are at risk. In fact, in this era of fashionable debt, high leverage, and hostile takeover (known euphemistically on Wall Street as "event risk"), AAA bonds may be chancier than most. Says Zane Brown, head of the bond department at **Equitable Capital**: "With a AAA, there's a heck of a lot more event risk than there is with a BBB," the lowest investment grade.

AAA-RATED INDUSTRIAL COMPANIES

Total debt to capitalization
by industry and company as a percent

Computers	**26%**
IBM	16%
Drug and health	**29%**
Bristol-Myers	11%
Eli Lilly	14%
Johnson & Johnson	23%
Merck	24%
Pfizer	20%
Electrical Equipment	**35%**
General Electric	24%
Food	**39%**
Campbell Soup	22%
Kellogg	28%
Multi-industry	**33%**
3M	12%
Oil	**38%**
Amoco	22%
Exxon	18%

SOURCES: SHEARSON LEHMAN HUTTON, STANDARD & POOR'S

In 1980 the straight-A club had 26 members, mainly in such recession-proof industries as oil, drugs, and food. But takeovers and the ongoing borrowing binge have reduced the list to today's surviving 12 (see table).

For example, as management began a leveraged buyout of **Fort Howard** this year, the paper company's AAA bonds tumbled to BB–. The shareholders profited, while the bondholders saw their investments slide under the weight of all the added debt. Says Richard Wilson, a fixed-income analyst with **Merrill Lynch**: "Takeovers help the shareholders and screw the bondholders."

Increasingly, AAA status costs the company more than a less exalted rating. For one thing, heavy debt often brings with it hefty tax deductions.

In addition, the AAA rating can sometimes mean a lower stock price because the company may appear to be stodgily run. This, in turn, makes a company more vulnerable to takeover. That's what happened this year to AAA-rated **Sterling Drug**, whose stock was undervalued. **Hoffmann-La Roche** launched a hostile bid, and Sterling was driven into the arms of **Kodak**.

S&P executive director Leo O'Neill says he expects more resignations from the club. Some of them will be voluntary, he predicts, and others involuntary. – **William E. Sheeline**

CLOWN COLLEGE

RICARDO FERRO

Japan now imports humor.

SEND IN THE CLOWNS

■ Aside from their end-of-the-day drinkathons when they can—and often *do*—let down their reserve, Japan's dedicated blue-suited managers tend to be as stiff as planks. To loosen them up, **Ringling Bros. and Barnum & Bailey Circus** is opening a college for clowns in Tokyo next September.

The students—salary men, waiters, store clerks, and others in the service industries—will learn stilt walking and other circus antics. But their majors will be improvisation and pantomime. Thus, says Ringling Bros. President Kenneth Feld, "the businessmen will lose their inhibitions and learn how to relate with foreigners."

The clown school will be operated under license by **Naturally Yours**, a Japanese health food company that wants to diversify. The first freshman class will have about 30 students. Their tuition fees have yet to be decided.

CEOs VIEW LIFE AFTER THE ELECTION

America's leading corporate chiefs say that with a Bush victory, they expect rising stocks and business expansion. Among this group, Dukakis never stood a chance. ■ *by Faye Rice*

THE CHIEFS of America's largest corporations have formed their recent business outlook on the assumption that George Bush will become President. On the eve of the election they looked forward eagerly to the business conditions they expect to prevail under a Bush Administration and discussed specific actions they might take—actions that would mostly mean good news for the economy. The prospect of a Dukakis victory practically chilled their spines. The CEOs figured investors will see things much as they do; by their estimate, a Bush victory rather than a Dukakis win would be worth 200 extra points on the Dow Jones industrial average by year-end.

These are among the results of the latest FORTUNE 500/CNN Moneyline CEO poll. The independent opinion research firm Clark Martire & Bartolomeo conducted the survey between October 12 and October 21, questioning 234 CEOs from FORTUNE 500 and FORTUNE Service 500 companies.

Polls extending back to last winter have shown that a solid majority of America's top CEOs favor Bush. But while 90% believed last February that the Republican nominee, whoever he might be, would win in November, that expectation wilted during the summer after the Democrats nominated Dukakis and Bush's nomination by the Republicans was assured. By mid-October, however, 89% of the CEOs polled had decided that a Bush win would not change the immediate outlook for their businesses, indicating a strong presumption that he would prevail.

Why were they so gung-ho for Bush? Answers emerge in some of the poll's most striking results. When asked under which President they would be more likely to expand their businesses, 62% chose Bush. Exactly one respondent, representing less than half of 1% of the total, chose Dukakis. Observes J. Landis Martin of NL Industries: "With Bush we have the security that governmental regulations won't increase during the next three years, so the cost of expansion won't be too high." A sizable minority of CEOs (33%) felt the outcome of the election would not influence their plans to expand. "We won't change our strategy no matter who is President," says Fuqua Industries' J. B. Fuqua, one of the few Democrats among the CEOs. David Hinson of Midway Airlines says, "We'll just keep running a good airline regardless of politics."

"I think investors will be much more optimistic if Bush is elected."

J. LANDIS MARTIN
NL Industries

Almost as impressively, 51% of the chiefs said they would more likely increase capital spending under Bush, while only a single respondent said he would under Dukakis. In the CEOs' view Bush is also far better news for job creation. Although Dukakis made "good jobs at good wages" one of his principal campaign themes, only 1% of the CEOs said they would be more likely to increase their work force under Dukakis than they would under Bush; 49% said Bush would more likely mean more jobs at their companies, and another 49% said the election's outcome wouldn't affect their hiring plans. Most said the election would not influence their plans to borrow money or adjust inventories.

A few CEOs believe Bush would benefit their industries specifically. Martin's NL Industries includes a drilling services oper-

Q **Would the election of George Bush significantly change your outlook for your business?**

A

Yes	11%
No	89%
Not sure	–

Q **Would the election of Michael Dukakis significantly change your outlook for your business?**

A

Yes	66%
No	31%
Not sure	3%

Q **Would you be more likely to [take the following steps] with Bush as President or with Dukakis as President?**

A

	Bush	Dukakis	No difference	Not sure
Expand your business	62%	*	33%	5%
Increase capital spending	51%	*	43%	6%
Increase your work force	49%	1%	49%	1%
Increase borrowing	32%	2%	58%	8%
Increase inventories	23%	*	58%	19%

* Less than 1%.

REPORTER ASSOCIATE *Jonas Bernard Blank* ation, and he says, "We think there is a good chance for a tax incentive to drill for natural gas or oil, which means our profits would continue to improve." That would be especially good news, considering that drilling services at NL have lost $700 million over the past six years and are just breaking into the black this year. E. B. Leisenring Jr. of Westmoreland Coal expects Bush to boost his business too. "Bush will sign into law a cost-effective clean air act that Reagan was not in favor of," he says. "This could encourage utilities to switch from high- to low-sulfur coal, which will be favorable to my company."

"Dukakis is less interested in the welfare of corporations."

NICK KELSH

E. B. LEISENRING
Westmoreland Coal

The CEOs believe that Wall Street is pro-Bush as well. The median of their forecasts equates a Bush victory with a slightly rising Dow; they predicted a close of 2200 at year-end, vs. 2140 when FORTUNE went to press. Their median forecast based on a Dukakis win was a decline to 2000. Looking beyond the medians at the full range of forecasts shows a more dramatic result: Only one CEO thought the Dow would close below 2000 at year-end if Bush were elected, while 27% thought it would close above 2200; when the CEOs were asked to imagine a Dukakis victory, the figures were almost precisely reversed.

The CEOs were so confident of their candidate's abilities that, when asked what they feared most about a Bush Administration, their most common answer was "nothing." Among those who cited specific concerns, the most prevalent was a worry that Bush wouldn't or couldn't effectively deal with the economy's No. 1 problem, the budget deficit. "Can he make the tough decisions on expenditure cuts so that the budget deficit can be reduced significantly?" asks Kenneth Lay of Enron, a Houston-based natural gas utility.

Q **What do you fear most about a Bush Administration?**

A

Nothing	**37%**
No progress on deficit	**21%**
Impasse with Congress	**9%**
Quayle as President	**9%**
Lack of leadership	**8%**
Higher taxes	**5%**

Others worried that Bush would not be able to work with a Democratic Congress. Says John B. Smith of Mayflower Group, an Indiana transportation company: "I fear that with a Republican President and a Democratic Congress we'll just float along, and the real problems—the budget and trade deficits—won't be addressed." Roughly the same number of chiefs were concerned about something happening to Bush—and Quayle becoming President. Harry Bubb of Pacific Mutual Life speaks for many when he says, "Quayle is scary."

The general question of Bush's leadership and vision disturbed almost as many CEOs. Edwin Lupberger of Middle South Utilities worries that "we might end up with a stalemate between the congressional and executive branches due to his lack of leadership. Reagan had an ability to articulate and communicate his programs that Bush doesn't seem to have."

All these fears amount to little compared with what the CEOs thought would happen in a Dukakis Administration. Nearly all the leaders surveyed expressed some sort of concern about the Massachusetts governor's moving to the White House. Perhaps it's to be expected, but they worried most that he would do just what George Bush said he would: tax and spend. Richard P. Wollenberg expresses a widely held view when he says, "I fear a burgeoning welfare state." Jess Hay of Lomas Financial had doubts about whether "his tax policy would be one that encourages savings, capital formation, and entrepreneurship."

Q **What do you fear most about a Dukakis Administration?**

A

Higher taxes	**38%**
Higher spending	**18%**
More regulations	**14%**
Lack of experience	**12%**
Inflation	**9%**
No progress on deficit	**8%**

Many chief executives considered Dukakis just plain antibusiness. His long connection with Harvard certainly won him no points with this group. "I fear the selection of academic advisers rather than business advisers," says John D. Nichols of Illinois Tool Works. W.R. Grace's J. Peter Grace gripes, "He'd bring down a group of Harvard professors with new ideas not really tried or proven." Several CEOs believed that Dukakis's agenda would include increased government regulation of business. "I fear that heavy government bureaucracy will return again, with all things that flow from that," says Robert Luciano of Schering-Plough.

"If Bush has to raise taxes, I won't mind. I think it is the only way to close the deficit."

J. B. FUQUA
Fuqua Industries

Q **Where would you expect the Dow Jones industrial average to close on December 30, 1988, if Bush is elected? If Dukakis is elected?**

A

Bush (median)	**2200**
Dukakis (median)	**2000**

Many cited Dukakis's lack of experience on the national and world scenes. The CEOs believed Dukakis especially weak in international affairs. Observed Peter L. Scott of Emhart: "He has a complete lack of understanding of international negotiations and the problems we have, particularly with the Russians." Frank Wobst of Huntington Bancshares would fear "a somewhat more amateurish approach to our foreign policy." Other leaders surveyed thought Dukakis would induce inflation. Why? Says Edward B. Brandon: "He lacks the ability to control spending, and we'll have to inflate the economy to take care of that."

As the U.S. economy enters its seventh year of uninterrupted expansion, American CEOs could hardly be expected to want to rock the boat. Ultimately, that seems to be why they were such enthusiastic fans of Bush. Says T. Neal Combs of Fruehauf, a Detroit auto parts manufacturer: "The Bush Administration will represent the status quo—slow, steady growth. And that's a very good thing for business." ■

HERE COMES THE BIG NEW CLEANUP

Stunned by evidence of ecological damage, Americans are again declaring war on pollution. It calls for fresh, market-oriented approaches, not the old rigid regulations. ■ *by Jeremy Main*

THE SUMMER OF 1988 will be remembered as the time "the earth spoke back," in the words of one of George Bush's speech writers. The heat and drought, the fouled beaches and burning forests, all seemed to chide us for turning the green earth brown. Since both presidential candidates discovered the environment as an issue and Congress is being prodded by angry voters, a burst of new laws and regulations can be expected under the next Administration. The question is whether we will get the right solutions to the right problems.

Heightened concern about the environment is justified. Scientists have detected increasing evidence that chlorofluorocarbons and other chemicals are rising to the stratosphere and eating the ozone layer, which protects life from cancer-causing ultraviolet rays. Carbon dioxide and other gases have accumulated over decades of Industrial Age combustion and threaten to raise the earth's temperature through the greenhouse effect.

Little wonder that the environmental movement has swelled in the Eighties, some organizations more than doubling their membership. A coalition of 18 major groups is preparing a "green blueprint" of policies to present to the new President and each of his Cabinet members. The next Administration will immediately confront major issues—acid rain, ozone at ground level and the lack of it in the stratosphere, radon, a further cleanup of PCBs, polluted groundwater, lead in drinking water, and possible environmental damage from oil exploration in the Arctic National Wildlife Refuge.

So serious are some of the dangers that many environmentalists are calling for a "third wave" of attacks on ecological problems. The first wave came at the turn of the century and was symbolized by Teddy Roosevelt's efforts to save the wilderness. The second arrived in 1962 with the publication of Rachel Carson's *Silent Spring*, about the effects of pesticides. Riding this wave, the legislation of the Sixties and Seventies went after highly conspicuous sources of pollution in the air, water, and ground with a mass of regulations, requirements, deadlines, and penalties. The cost has been high—about $78 billion a year lately—but the movement has won major victories. The pesticide DDT is banned, Lake Erie has come back to life, some 216,000 miles of polluted rivers are swimmable and fishable once more, airborne lead is almost gone, and some other major air pollutants have been reduced significantly.

The third-wave attack demands a fresh, third-wave approach that learns from the errors of the past. Congress has been inclined to saddle the nation with laws that are expensive, prone to regulatory and legal hassles, tied to unrealistic goals, and locked into the wrong technologies. The burst of crowd-pleasing legislation passed just before the elections illustrated Congress's old bad habits—bills to control medical wastes, ban the dumping of sewage sludge in the oceans, renew the Endangered Species Act, and impose new restrictions on pesticides.

With a more commonsense, market-oriented strategy, the U.S. could get on with the cleanup without drowning the economy in unnecessary regulation and expense. William D. Ruckelshaus, head of the Environmental Protection Agency in the Nixon and Reagan Administrations, says the U.S. has taken the "command

THE PROGRESS TO DATE

AIR POLLUTION

Change in emissions 1970–86

■ **Particulates**	**down 64%**
■ **Carbon monoxide**	**down 38%**
■ **Volatile organic compounds**	**down 29%**
■ **Sulfur oxides**	**down 25%**
■ **Nitrogen oxides**	**up 6%**

WATER POLLUTION

Change since early 1970s

■ **Ocean dumping of industrial waste**	**down 94%**
■ **Cities without adequate sewage treatment**	**down 80%**
■ **Miles of river unfit for swimming**	**down 44%**
■ **Ocean dumping of sewage sludge**	**up 60%**

SOURCES: ENVIRONMENTAL PROTECTION AGENCY, ASSOC. OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS

THE JOB AHEAD: DO'S & DON'TS

Acid rain: Keep reducing sulfur oxides gradually; avoid expensive new clampdown until evidence justifies it.

Ground-level ozone: Put new curbs on gas stations and other small sources; avoid drastic new restrictions on auto emissions.

Global warming: Continue using fossil fuels more efficiently; encourage nuclear power.

Water pollution: Speed construction of sewage treatment plants.

Toxic waste: Use incentives to reduce volume.

Garbage: Step up recycling; burn or bury the rest under strict controls.

and control" approach about as far as it can go. Ruckelshaus, who now heads the country's second-largest waste disposal company, Browning-Ferris Industries, favors greater use of economic incentives wherever appropriate.

So do two Senators who resist the congressional rush to regulate: Timothy Wirth, a Colorado Democrat, and John Heinz, a Pennsylvania Republican. In a newly released report they sponsored, they urge that the U.S. harness market forces "by providing incentives for businesses and individuals to go beyond what regulators can require." The two Senators recommend an array of tradable credits and permits, taxes, swaps, refunds, and deposits to tackle 16 major environmental problems.

Some of these ideas have been around for years. Since 1979, EPA regulations have permitted the trading of emission credits within an imaginary "bubble" over an industrial area. Credits earned in one place where a company cleans up more than the law requires can be applied to another place where permissible pollution levels are being exceeded. A corporation may trade the right to pollute among its own divisions or with another company. Armco, Du Pont, USX, and 3M have traded air pollution credits, and a small market for them has developed. But Congress has been cool to the whole idea and turned down a proposal to tax sulfur dioxide emissions to spur a cleanup of the electric power industry's coal-burning plants. While economists argued that the tax was the most cost-effective method of cutting emissions, environmentalists branded it a license to pollute.

GEORGE LEAVENS

The Cuyahoga River in Cleveland, blackened in 1965 by discharges from a steel plant (above), was once so polluted it caught fire. Cleaned up, it now invites outdoor diners.

Today an increasingly sophisticated and diverse environmental movement sees an advantage in using incentives. Frederic

Despite a general improvement in air quality, smoggy days bedevil Denver, one of 76 cities that recently missed a federal deadline to cut ozone and carbon monoxide readings.

Krupp, executive director of the Environmental Defense Fund, an adviser on the Heinz-Wirth report, sees "a lot of room for creative approaches that put the economic signals where they should be." When it comes to methods, Krupp sounds amazingly like Harvey Alter, a chemist who is an environmental spokesman for the U.S. Chamber of Commerce. "Instead of giving people a lot of regulations and forms," says Alter, "give them goals and let them figure out how to get there. Congress has the mistaken belief that you have to beat on people to get anything done."

Here is a rundown on the nation's leading environmental issues and how they should be attacked:

ACID RAIN

Lamentably, Congress shows no inclination to apply common sense to acid rain. Sulfur oxides, largely from coal-burning utilities in the Midwest, have been blamed for acid rain, which falls mostly in the East and in Canada. Scientists are still debating how much damage it is doing to trees and to lake and river life, and some see no emergency. A recent EPA study of 500 streams in the East found that 2.7% of their combined lengths was acidic. An interim report from the ten-year, $500 million National Acid Precipitation Assessment Program, which will complete its work in two years, says that acidity seems not to be getting worse.

Proof of damage to forests turns out to be elusive. The death of trees in southern Appalachia was first attributed to acid rain. Now investigators blame it on an insect, the balsam woolly adelgid, though they think acid rain and ground-level ozone may have made the trees more vulnerable. If any business interest should be concerned about identifying acid rain damage, it is the paper industry. Yet Champion International and International Paper report no damage to forests they own in areas where the rain falls. The problem, in short, seems worrisome though not alarming.

But Congress has stopped listening. Even conservative lawmakers are persuaded that the country wants action now. Newt Gingrich, a young Republican Congressman from Georgia, says, "There's no question acid rain is a problem. Industry has lost that battle and is foolish to continue to fight it." Many members of Congress are itching to require utilities, mostly in the Midwest, to spend billions installing and running scrubbers to remove the offending sulfur dioxide. No matter that better, cheaper, clean coal-burning technologies are within reach. No matter that a major coal plant cleanup is already under way.

Under the 1977 amendments to the Clean Air Act, scrubbers have been installed in 146 new generating units, and many older plants have switched to burning low-sulfur coal. As a result total sulfur oxides have dropped by 21%, even though the use of coal to generate electric power is up 44%. *With no new laws,* emissions will keep falling as modern plants come on line and old ones are scrapped. It surely makes sense to keep the emissions heading downward until more evidence is in. But Congress's get-tough faction wants a bill that would compel quick action to cut sulfur dioxide far more drastically—by half within a decade or so. That would require the costly shoehorning of scrubbers into scores of old plants.

MANDATING SCRUBBERS is an expensive, technically inferior solution. For every ton of sulfur they keep out of the smokestack by spraying furnace gases with a slurry of limestone and water, scrubbers produce two to seven tons of useless sludge that has to be dumped somewhere. Just to operate a scrubber consumes 3% to 5% of the generating plant's energy.

Depending on the final form of the law Congress passes, the utilities would have to spend somewhere between $3.5 billion and $8 billion a year building and running scrubbers. This may be good news for Babcock & Wilcox, Combustion Engineering, Foster Wheeler, and other companies that supply the equipment, but not for utilities and their customers. American Electric Power, the biggest utility affected, claims that unless the costs are

REPORTER ASSOCIATE *Patricia A. Langan*

shared by other parts of the country, AEP's residential rates would increase 23% and industrial rates as much as 50%—enough to drive marginal customers out of business.

A third-wave solution for acid rain would not oblige utilities and other polluters to install scrubbers, but leave them free to choose the most effective and economic ways to meet air-quality standards. For example, with "acid rain credits" proposed by the Heinz-Wirth report, a utility wouldn't be forced to waste money grafting a scrubber onto an old plant. Instead, it could let the old plant live out its life undisturbed, earning the necessary credits to keep it going by reducing emissions more economically in a new plant, or buying the credits from another company that had clamped down on sulfur dioxide.

If a cleanup were necessary, a utility could use whatever technology seemed best for the job—scrubbers, fluidized-bed, coal gasification, or other methods developed by 16 companies that are receiving $537 million in grants this year from the Department of Energy. The companies are contributing $810 million of their own. Willis S. White Jr., AEP's chairman, says his company will start up a clean-burning demonstration plant in 1990 and can have a full-scale facility operating by 1995. Both will use a "pressurized fluidized-bed" system that burns coal suspended in blowing air and mixed with crushed limestone. The result is a cleaner-burning and more efficient plant. While conventional coal facilities convert only 35% of coal to electricity, fluidized-bed plants can achieve efficiencies of 38% to 40%.

OZONE

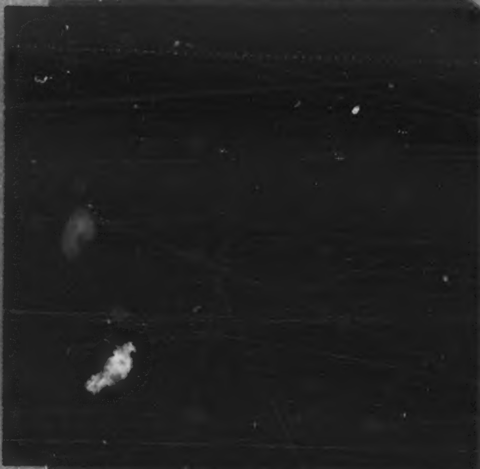
This form of oxygen plays a beneficial role in the stratosphere, shielding life from the ultraviolet rays of the sun. The Senate has ratified an international treaty committing industrial countries to a 50% reduction in the use of ozone-depleting chlorofluorocarbons by 1998. The problem may be worsening, and the EPA recently recommended a total phase-out—probably a good move. CFCs are used in refrigerants, air conditioners, and foam plastic insulation. While substitutes are already being found, they need to be tested for cost and effectiveness.

Ozone at ground level is a different story, an environmental bad guy. Here Congress is in a mood to move rashly, with unrealistic new rules.

When sunlight and heat react with gasoline fumes and other volatile organic compounds, ozone forms. If the air is stagnant, as it was during last summer's heat wave, smog hangs close to the ground and ozone readings rocket. Ozone can temporarily cause coughs and chest pains even among healthy people, and long-term exposure is suspected of causing permanent damage to the lining of the lungs, but the evidence is still inconclusive.

The 1977 Clean Air Act set unrealistic deadlines for cleaning up ground-level ozone, thereby laying the groundwork for political farce. Despite general improve-

MR. CLEAN TALKS ABOUT PICKING UP THE GARBAGE



Former EPA Administrator Bill Ruckelshaus

William D. Ruckelshaus, 56, has served as Mr. Clean in two Administrations. Under President Nixon he became the first head of the new Environmental Protection Agency in 1970. President Reagan called him back to set the EPA on its feet in 1983 after scandals at the top had destroyed its effectiveness and morale. Respected by many environmental activists as well as corporate executives, Ruckelshaus has been an environmental lawyer, consultant, and venture capitalist. He recently became chief executive of Browning-Ferris Industries of Houston, the second-largest waste disposal company in the U.S. In an interview he talked about the latest phase of the cleanup.

On beach pollution: Usually when environmental laws are passed as a result of a crisis, we end up with laws that are flawed. One reaction in the East has been to call a halt to ocean dumping of sludge, even though the sludge has nothing to do with the pollution on the beaches. If you don't dispose of the sludge at sea, you must bury it on land or burn it.

On finding waste burial sites: Every time recently we've tried to locate a place, we run into serious public resistance. People respond to the First Law of Garbage, which is everybody wants you to pick it up, and nobody wants you to put it down. But in the state of Washington, where a firm I was formerly with solicited bids from communities on the location of a hazardous-waste facility, eight have asked for continuing discussions. We told them we are in business to make a return and would share that with them.

On recycling: We can recycle a much higher percentage of household garbage than we now do, which is something like 10%.

On acid rain: I think the evidence of damage is strong enough that it makes sense to keep the levels of sulfur oxides and nitrogen oxides heading downward, as an insurance policy. You can do that at relatively modest cost. But if you're going to talk about bringing them down 50% with scrubbers, the cost is huge.

On the EPA: The environmentalists beat up on it. Congress beats up on it. The Administration usually ignores it. In a curious way, the strongest supporters of a forceful EPA are the industries it regulates. They want government to set reasonable standards, and they want the public to know they are being enforced.

Environmentalists had a suggestion when a New York garbage barge returned home loaded.

DENNIS CAPOLONGO—BLACK STAR

ment in air quality, most major U.S. urban areas are failing to meet the standards called for in the law. This can happen if readings at only one monitoring station in a metropolitan area exceed the EPA limit: 12 one-hundredths of a part per million for one hour a year three years in a row. After repeatedly postponing the Clean Air Act's date for compliance, Congress let it stand when the latest deadline came August 30.

SOME 100 URBAN AREAS are now violating the air standards, and the EPA is obliged by law to take action. In 14 cities with the worst violations, the agency plans to block any new industrial plants that would emit more than 100 tons of ozone-forming pollutants a year; that would rule out some fairly modest-size factories. But there's little incentive for anyone to comply with the targets, and the EPA's enforcement is likely to be halfhearted because the agency is short-handed, the targets are hard to attain, and in any case Congress could well come up with new goals.

Congress's proposed answer is to slap another round of restrictions on a highly visible source of ozone: the automobile. Bills that have been introduced would demand a slash in emissions of as much as 60% by the early 1990s. Pollution from cars, however, has already been reduced drastically. Today's new vehicles spew out 96% less hydrocarbons than their counterparts of the late 1960s, as well as 76% less nitrogen oxides and 96% less carbon monoxide. The contribution of all vehicles to ozone is now down to 29% of the total and will reach 20% by 1990, under the rules now in effect, as new cars replace old ones.

The auto industry claims, with some justification, that the technology does not exist to cut emissions as deeply as Congress is considering. But the emission of ozone-causing pollutants could be reduced at more reasonable cost by other provisions before Congress. The lawmakers or the EPA may require that gasoline be made less volatile to reduce evaporation, mandate fume-trapping sleeves on gas hoses and nozzles as California has done for years, and require autos to be equipped with carbon canisters to trap fumes during fueling. It would also make sense to crack down on ozone emanating from various other sources, such as solvent plants, paint shops, and small dry-cleaning establishments still exempt from present rules.

Special nozzles capture gas fumes in California and several cities elsewhere.

HOWARD [illegible]

GLOBAL WARMING

The heat wave that gripped much of the U.S. last summer created new unease about the potentially biggest environmental threat of all: A blunt statement by Dr. James Hansen, director of the Goddard Institute for Space Studies in New York, that the earth's temperature is already rising because of the greenhouse effect had an electric effect on policymakers. Congress appropriated $43 million to study global warming, and Republican Senator Robert Stafford of Vermont, an environmental enthusiast who is retiring from Congress, put in a bill that would encourage the phase-out of electricity from fossil sources by the year 2050.

Some scientists feel Hansen is jumping the gun. It may have been hot in much of the U.S. last summer, but it was cold and wet in Europe, and much of South America had a colder-than-average winter. However a new EPA study reports a wide scientific consensus that sometime in the next century the earth's average temperature will rise between 1.8 and 3.6 degrees Fahrenheit. That's because as its economy expands, the world burns ever increasing amounts of fossil fuels, whose unavoidable byproduct, carbon dioxide, is considered the chief culprit in the greenhouse effect.

By trapping heat in the earth's atmosphere that would otherwise be radiated out to space, the accumulation of carbon dioxide, methane, and other gases will probably upset the careful balance of forces that makes the earth so hospitable to life. An increase of a few degrees could have drastic effects on ocean levels, rainfall, vegetation, agriculture, and our way of life. The global warming problem, says John Adams, executive director of the Natural Resources Defense Council, "overrides everything else. If we don't solve it, it doesn't matter what else we do."

Parts of the world are making progress in holding down fossil fuel consumption. Since 1973, when a steep rise in OPEC's oil price jolted Americans into insulating homes and buying fuel-efficient cars, U.S. energy use has barely increased, even though the economy has grown 45% in inflation-adjusted terms. West Germany and

Japan do even better: They use half as much energy per unit of GNP as the U.S. does. Further headway could be made if solar energy were substituted for fossil fuels, but for some time to come it will be too expensive for widespread use. Greater hope lies in convincing the public that nuclear power can be safe if new reactors are built using the latest fault-tolerant designs (FORTUNE, August 1). The persuasive process is beginning: Some environmentalists are coming around to the view that atomic power, which creates neither acid rain nor carbon dioxide, may have to be reconsidered.

The measures some politicians and environmentalists are talking about could change our way of life. During his presidential campaign, Michael Dukakis supported a 50-mile-per-gallon goal for automobiles. To get the average American into such a car would take an act of God rather than an act of Congress. His choice today would be restricted to a Honda Civic CRX HF or a midget GM import from Japan called the Geo Metro. The Heinz-Wirth report proposes a less draconian standard of 38 miles per gallon by the end of the century, vs. the average 26 mpg mandated by current law, to be realized through incentives rather than by fiat. Revenues from a tax on gas guzzlers would pay for rebates to purchasers of gas sippers. The idea is worth consideration.

Electric utilities, eager to avoid building expensive new generating plants, have already discovered the value of incentives. Southern California Edison contributes $50 to $75 to the cost of a refrigerator if it is at least 20% more efficient than California law requires and has given away 500,000 highly efficient light bulbs to low-income customers since the early 1980s. Panasonic and Philips of the Netherlands developed the energy-saving lamps, which are small fluorescent bulbs that screw into incandescent bulb sockets. They use only 15 watts, but glow as brightly as regular bulbs using 60 to 75 watts. They sell for $10 to $15 each, but last nine times as long or more.

SEWAGE

Fouled beaches aroused public indignation even more last summer than the weather. Congress reacted hastily by passing a bill on medical waste. It directs the EPA to set up yet another bureaucratic system for segregating, labeling, and tracking the stuff, with criminal and civil penalties for those who mess up the paperwork. In the final days, Congress also passed a bill banning the dumping of sewage sludge in the ocean by 1991.

Revolting though it was, the quantity of used hypodermic syringes and other medical throwaways that wound up on Eastern beaches was trivial. Charles Ehler, director of oceanography at the National Oceanic and Atmospheric Administration, sees medical waste as a "relatively benign environmental problem" and describes ocean dumping as "a very small contributor" to ocean pollution. Most of the sludge, dumped 106 miles off the coast of New York, disperses in the ocean. Little is known about its effects on sea creatures, but it may make them more susceptible to disease. The real marine pollution problem, Ehler says, is the runoff of agricultural chemicals, filth that washes off city streets, and particularly the discharge of insufficiently treated sewage.

ALAN D. LEVENSON

To conserve energy—and battle global warming—Manuel Rocha of Los Angeles screws in a power-saving fluorescent light bulb.

In an infrastructure program second only to the interstate highway system in scope, the U.S. has spent $113 billion since 1972 to build and upgrade 15,000 sewage treatment plants. But many towns and cities lack adequate treatment facilities. Furthermore, older cities such as New York and Chicago have common storm and sanitary sewer lines. Heavy rains pour off the streets and temporarily overwhelm the sewage treatment plants. Hundreds of millions of gallons of untreated sewage pour into rivers and coastal waters, shutting down beaches and shellfish beds. During the Reagan Administration the construction of new treatment plants was slowed because of federal budget cuts. It should be accelerated again.

HAZARDOUS WASTES

U.S. policy on hazardous wastes illustrates how misguided the command and control approach can be. Superfund, the multibillion-dollar program to clean up toxic wastes from bygone years, has become so tied up in regulations and litigation that after eight years only 40 sites have been sanitized. It pays companies more to sue each other or the government over who should pay than to clean up. So far 1,175 sites have been identified as requiring immediate attention, and estimates of what the job will cost run from $100 billion to $500 billion. "There's mounting evidence that Superfund isn't working," says Joel Hirschhorn, the waste expert at the Office of Technology Assessment. The toxic waste cleanup doesn't lend itself to the incentive approach, but Hirschhorn and others think Superfund would show more results if the EPA were better manned and managed and more receptive to new technology.

THE NOXIOUS substances that industry brews today are better handled, for the laws are stricter on what can be poured into rivers or dumped somewhere else, and the economics of disposal make market-oriented solutions feasible. The sheer cost of getting rid of a ton of hazardous waste has climbed from $10 before legislation was passed in 1980 to as much as $500 today, when the stuff has to be incinerated or buried in double-lined landfills. These prices, plus growth in the solid-waste business, make it likely that Browning-Ferris and its main competitor, Waste Management of Oak Brook, Illinois, will continue to earn a return of better than 20% on shareholders' equity.

The expense also gives corporations an incentive to reduce or recycle wastes. For example, 3M, the most publicized practitioner of waste control, scrubs metal circuits with pumice instead of acids, thereby eliminating the need to get rid of 20 tons a year of nasty stuff.

continued

Where economics don't favor such practices, the incentives idea could be carried a step further. The Heinz-Wirth report favors a kind of deposit and refund system for hazardous wastes, akin to that used for beverage containers in many states. Industries that generated toxic substances could get a refund only if they returned them for proper burial or recycling.

ORDINARY GARBAGE

Municipal trash is piling up—literally. The U.S. produces twice as much per capita as any other country and puts 80% of it in landfills. Because it is increasingly difficult to find dump sites, the EPA has signaled a new approach: to reduce the volume of garbage that goes to landfills by 45% in four years, by incinerating 20% and recycling or otherwise keeping another 25% out of the waste stream. Environmentalists consider the recycling goal minimal, citing Japanese cities that handle twice as much of their wastes that way (FORTUNE, April 11).

Some places are ahead of the EPA's timetable. New Jersey, using the command approach, has ordered all its counties to submit plans to set aside 25% of their household and commercial trash for separate pickup and recycling. About one-quarter of the state's population already sorts its garbage.

Seattle is trying the carrot. Containers of recyclable cans, bottles, newspapers, and junk mail have been collected separately at no charge since February. But citizens have to pay $13.55 a month to have one can a week of ordinary garbage picked up, and $5 for each additional can. By fall, 55% of Seattle's households had begun separating recyclable trash to reduce charges, and the tonnage is exceeding expectations. Rather than dumping its sewage sludge in Puget Sound, as it used to, Seattle now sells it as a nutrient-rich commercial fertilizer.

■ Environmentalism began as a sort of counterculture movement in the 1960s, then was embraced more eagerly by the Democrats than by the Republicans. Now it may have become truly national and nonpartisan. Young voters, in particular, are displaying a much larger willingness to value and pay for clean air and clean water. Maybe, with luck, the country will also look for the cheapest, least burdensome ways of tackling its environmental problems. ■

ENVIRONMENTAL ANXIETY GOES GLOBAL

■ Dead seals did for Europe's environmental awareness last summer what medical waste did in the U.S. After 12,000 of the creatures washed up along the coasts of the heavily polluted North Sea, voters spoke out in favor of tougher laws. Environment-conscious Swedes gave their radical Green Party nearly 6% of the popular vote in recent elections, sending 20 Greens to parliament for the first time. That's second only to the 44-strong Green faction in West Germany's lower house. In Japan, which launched an industrial cleanup in the 1970s, rising traffic and an economic boom have allowed pollution to rebound.

VAN DER VEER—GREENPEACE

Europe will end shipboard burning of toxic wastes in the North Sea in 1994.

The most remarkable change in Europe has been the about-face of Britain's Margaret Thatcher. A few years ago the Iron Lady sternly denounced environmental pressure groups as "the enemy within." But in her first major speech on the subject after nine years in office, Thatcher recently called protecting the environment "one of the great challenges of the late 20th century." She identified acid rain, ozone depletion, and the greenhouse effect as major concerns.

Her words have already brought one big policy change. Last year, at an international conference in Montreal, Britons were among those who successfully blocked a proposed 80% reduction in ozone-destroying CFC emissions by 1999. Within days of Thatcher's speech, Lord Caithness, her environment minister, declared that Britain is now determined to slash CFC emissions by 85% "as soon as possible." Europe's environmental agenda for the 1990s presages a bigger spending rise, in relative terms, than the U.S. faces. No. 1 on the priority list is probably the North Sea. At a conference last year the countries that border its befouled waters pledged to cease all dumping of sewage sludge and the burning of toxic waste in ships like the one at left by the mid-1990s. West Germany's environment minister estimates that his country alone would need to spend $11 billion on the North Sea cleanup.

Next in urgency comes auto exhaust pollution. West Europeans have been slow to adopt catalytic converters, mandatory on new U.S. cars since the mid-1970s. Despite evidence that mounting car and truck traffic is defiling urban air, France recently scuttled an EEC plan that would have called for modest pollution controls on the small cars that account for about half the European market. Peugeot, a major French employer, convinced the government that such a rule would make its cars too expensive, costing sales and ultimately French jobs. By 1994, however, catalytic devices will be mandatory throughout the EEC for larger cars.

Just as Canada rails against sulfur oxides from the U.S., Scandinavia and other downwind countries point the finger at Britain. Last June the EEC's 12 members ended five years of wrangling and agreed on who should cut back and how much. Britain, West Europe's biggest contributor of sulfur oxides, will go beyond what is required in the U.S.: It will install scrubbers on old coal-burning power plants. Even the Germans, who already match the toughest U.S. standards, will have to spend heavily polishing their pristine performance. **—Richard I. Kirkland Jr.**

HOW JAPAN WILL SPEND ITS CASH

Talk about a shopping spree: Together the Japanese industrial giants have accumulated $60 billion and are itching to use it. Your company could be on their list. ■ *by Carla Rapoport*

PENCIL LOVERS, don't take a job at Toyota Motor Corp. The world's richest company—with $13.7 billion in spare cash—limits employees to one at a time. A sign over the towel dispenser in the restroom at headquarters reads: "Visitors Only." Matsushita Electric Industrial (Panasonic, National, among other brands), which has almost as much cash, has no towels at all in its restrooms. Statues of Pegasus and Michael Faraday in the Matsushita courtyard look like rejects from a Soviet collective. Need to make a phone call? Employees cheerfully wave you to pay phones in the lobby.

Welcome to the world of superrich companies, Japanese style. With the rise in the yen and the export successes of the past 20 years, the Japanese now have the largest accumulation of corporate cash in the world Out of 26 international companies with more than $1 billion in net cash and marketable securities, 19 are in Japan (see chart). Only three are American: Ford, Boeing, and IBM. Four are in Europe: Siemens, Daimler-Benz, and BASF in West Germany, and Volvo in Sweden.

Are the Japanese amassing a war chest or just setting new records for stinginess? Their Scrooge-like attention to costs made them rich in the first place. And it helps that shareholders in Japan have never been read their rights. But hey, guys, with more than $60 billion in net cash altogether, isn't it time to loosen up?

Surprisingly, the answer appears to be yes. You haven't seen a lot of action yet, but you will—and soon. In their plain-vanilla linoleum-floored boardrooms, directors are making plans for all that cash. Will the companies become even tougher competitors? As the Japanese say, *mochiron*, of course. Expect the following:

- A big surge in overseas acquisitions. The Bridgestone-Firestone and Sony–CBS Records deals were just the beginning.
- Rapid diversification. Sanyo Electric, whose sales lag behind more heavily leveraged competitors like NEC and Fujitsu, is moving into property development.

The New York Times Magazine
SONY AND CBS R
WHAT A ROMANCE!
By Peter J. Boyer

1988 THE NEW YORK TIMES

The first wave: Sony's Morita buys CBS Records.

- Huge increases in research and development spending by those cash-rich companies that are not tops in their industries. Nippondenso, one of the largest international car-parts makers, has a list of product areas, from windshield wipers to alternators, where it aims to be No. 1 worldwide.
- A fast erosion of classic Japanese consensus management. It's hard to spend large amounts of cash in a hurry if you have to get absolutely everybody on board first.
- A big increase in corporate donations. If you run a charity, now could be the time to learn Japanese.

Of these fundamental changes, acquisitions in the West will be the most dramatic. Says Jun Imanishi, a 35-year-old managing director at Morgan Stanley Japan: "It's not just their cash, it's the amount of money these guys could borrow, which ranges from huge to unlimited. All of these companies, from our viewpoint, are serious mergers and acquisitions candidates, and we are talking to them—with no exceptions." Adds Tadashi Natori, a director and general manager of investment banking at the Industrial Bank of Japan: "They can't sit and sleep on their money anymore."

Should the West be worried? Probably not. The Japanese make good owners. They pay well for companies, they don't break them up, and they leave management intact. Yusho Yamamoto, head of corporate finance for Long-Term Credit Bank, Japan's current leader in mergers and acquisitions, says: "The Japanese look at the U.S. and see that companies are like balls being thrown around. No one tries to keep them and grow. The Japanese do." Adds W. Carl Kester, a Harvard business school professor: "I doubt there are many CEOs out there quaking in their boots about the Japanese. They're more worried about other Americans or Canadians or Germans or the English."

To get into the M&A game, Japanese companies have had to overhaul their corporate structures, not to mention their business philosophies. Says a leading Japanese banker, who asked not to be named: "Talking to these companies about spending their money was like shouting into the desert."

continued

REPORTER ASSOCIATE *Mark Alpert*

Investment bankers had no access point, no person to call, no one in charge of thinking about something other than cranking out widgets. In the past few months, however, new projects departments with decision-making powers have been sprouting like weeds. Last summer Toshiba set up a ten-person team to study acquisitions full time. Matsushita has two executive vice presidents who review ideas flooding in from the investment community. Says Mitsuo Goto, president of Nomura Wasserstein Perella, a new joint venture of Nomura Securities and Wasserstein Perella: "It used to be that 40 or 50 people had to know something before the president knew and before he would act. Everyone had to put his chop on the idea. Now corporate strategy people have a direct line to the top."

All the Japanese executives interviewed for this story insisted that they would never consider a hostile takeover of a company, foreign or domestic. Morgan Stanley's Imanishi isn't sure they can stick with that position indefinitely, but he agrees that the current mood is friendly, not fierce. Adds Jerome Corcoran, managing director of investment banking at Merrill Lynch Japan: "This whole list of cash-rich companies is driven to find strategic investments, not return on investment."

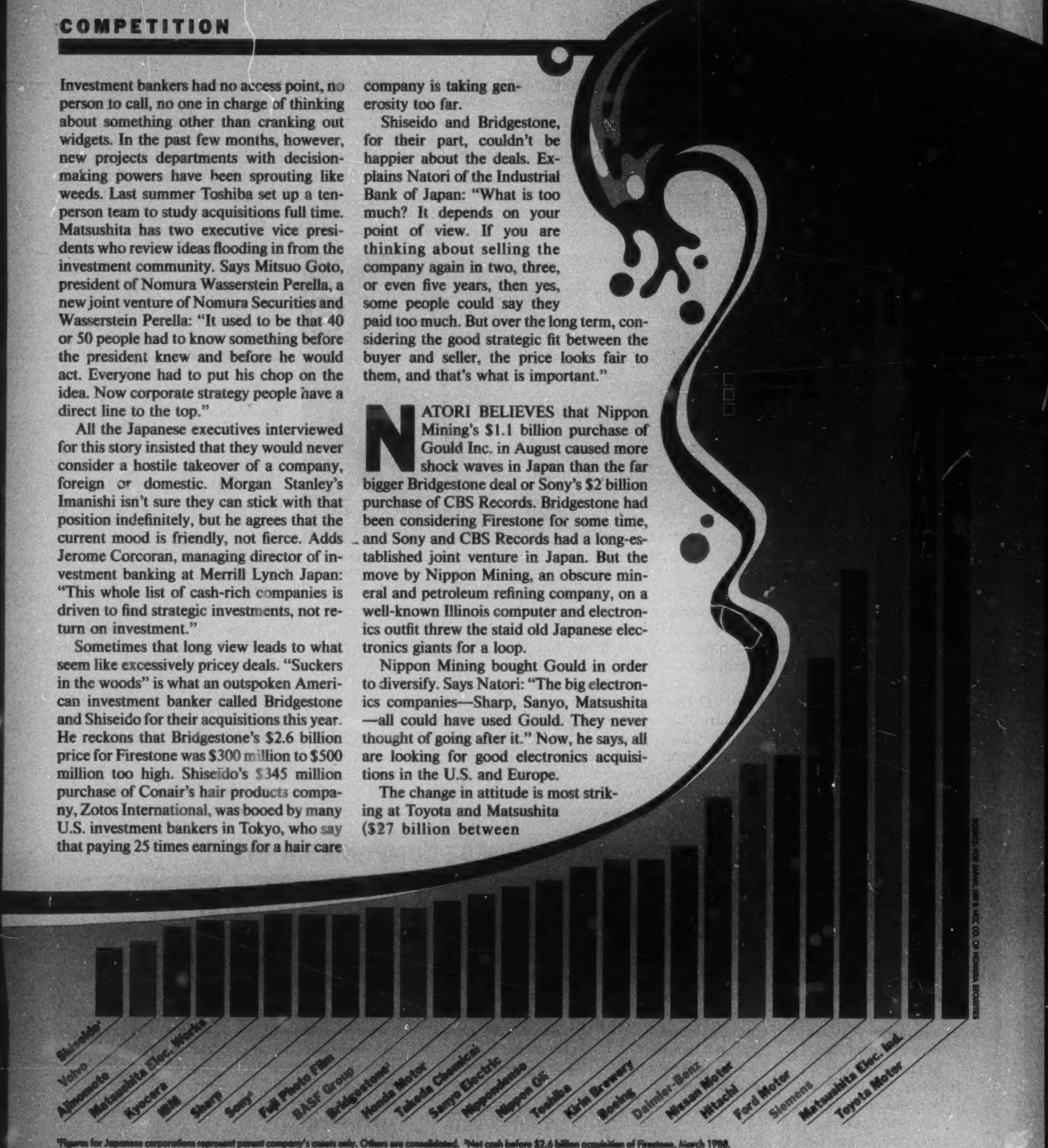
Sometimes that long view leads to what seem like excessively pricey deals. "Suckers in the woods" is what an outspoken American investment banker called Bridgestone and Shiseido for their acquisitions this year. He reckons that Bridgestone's $2.6 billion price for Firestone was $300 million to $500 million too high. Shiseido's $345 million purchase of Conair's hair products company, Zotos International, was booed by many U.S. investment bankers in Tokyo, who say that paying 25 times earnings for a hair care company is taking generosity too far.

Shiseido and Bridgestone, for their part, couldn't be happier about the deals. Explains Natori of the Industrial Bank of Japan: "What is too much? It depends on your point of view. If you are thinking about selling the company again in two, three, or even five years, then yes, some people could say they paid too much. But over the long term, considering the good strategic fit between the buyer and seller, the price looks fair to them, and that's what is important."

NATORI BELIEVES that Nippon Mining's $1.1 billion purchase of Gould Inc. in August caused more shock waves in Japan than the far bigger Bridgestone deal or Sony's $2 billion purchase of CBS Records. Bridgestone had been considering Firestone for some time, and Sony and CBS Records had a long-established joint venture in Japan. But the move by Nippon Mining, an obscure mineral and petroleum refining company, on a well-known Illinois computer and electronics outfit threw the staid old Japanese electronics giants for a loop.

Nippon Mining bought Gould in order to diversify. Says Natori: "The big electronics companies—Sharp, Sanyo, Matsushita—all could have used Gould. They never thought of going after it." Now, he says, all are looking for good electronics acquisitions in the U.S. and Europe.

The change in attitude is most striking at Toyota and Matsushita ($27 billion between



SOURCES: FOR JAPAN, NRI & NCC CO. OF NOMURA SECURITIES

[1] Figures for Japanese corporations represent parent company's assets only. Others are consolidated. [2] Net cash before $2.6 billion acquisition of Firestone, March 1988. [3] Net cash after $2 billion acquisition of CBS Records, November 1987. [4] Net cash before $345 million acquisition of Zotos International, September 1988.

ILLUSTRATION BY JOHN PIRMAN

them). For years top executives at both companies insisted that excess cash was an untouchable reserve for hard times. Then came some really hard times—the rapid appreciation of the yen against the dollar two years ago that put an extraordinary squeeze on Japanese profits. Both Toyota and Matsushita weathered the storm of *endaka* without drawing down reserves, though the interest income was a handy boost for the bottom line.

Though many auto analysts worry about worldwide overcapacity, Toyota still wants to expand. Says executive vice president Tsutomu Ohshima: "We do not think the growth of the automobile business has stopped." He says equity participations, joint ventures, and acquisitions are all possibilities. "If an acquisition looks right, we'll look at the candidates positively. We wouldn't like to refuse some food without even tasting it," he says with a laugh.

Lighting up another Peace cigarette, Ohshima continues: "Such an acquisition would be for the purpose of winning the survival race in the world automotive business, which is getting more and more heated. It's not that we want to beat General Motors, it's that we want to make sure they won't beat us."

WHAT WILL Toyota buy? Ohshima refuses to speculate, but a fair guess is something in Europe, where Toyota cannot keep up with demand in some countries and is hampered by import restrictions in others. One rumored target is Porsche, the German sports car maker with a close-to-cultish following. Another possible move for Toyota would be an equity or production deal with a carmaker in Spain or Turkey. Outside the auto business, Toyota has already stuck its toe in electronics, communications, and aircraft service and sales; further purchases in these areas have to be considered safe bets.

A recruit from Bridgestone (right) checks a Firestone tire.

JAMES LUKOSKI

Matsushita admits that it missed the boat by not investing heavily in computers. The giant company, with $38.6 billion in sales last year, feels it can no longer look forward to a robust future on the strength of its videocassette recorders, washing machines, and toaster ovens. Says Jun Honda, a corporate finance manager: "We want to become a worldwide, comprehensive electronics company rather than just a Japanese appliance manufacturer. We have to consider mergers and acquisitions to get there." He says that the company is finally breaking out of its engineering mind-set, realizing that it can no longer insist on building and designing everything itself. Says Honda: "We are a huge business, but we do lack technology in a number of areas." Matsushita wants to buy companies—and employees—with expertise in office automation, factory automation, computer networks, and custom memory chips.

Hitachi plans to increase spending for R&D and build more plants overseas, but like Matsushita the company also hopes to acquire foreign brain power. Says Yasuo Miyauchi, Hitachi's crusty executive vice president: "In some of our areas we are not so good at what we do. We are not the leading company." His goal is to make Hitachi as big or bigger than IBM or GE. "M&A is at the top of our list," he says. In computers and telecommunications, for example, Hitachi still distributes its products through Olivetti in Europe and National Advanced Systems in the U.S. Eventually Hitachi would like to build and sell its own brand of computers in the U.S. and Europe. Says Miyauchi: "To develop all that, we need more human resources."

Toshiba's wish list? Says Nobuyuki Horiuchi, general manager for finance: "We're interested in companies in a promising or growing business. Computers, integrated circuits, medical equipment, telecommunications, ceramics, superconductivity, are some fields we are looking at. Our range is from the tiny to the huge." Like Hitachi, Toshiba plans to expand its overseas production sites, but sees acquisitions as a good way to grow.

continued

WISH LISTS: WHAT JAPANESE COMPANIES WANT

TOYOTA	Matsushita Electric	HITACHI	TOSHIBA	Nippon Oil
Build new factories around the world. Diversify through acquisitions in electronics, telecommunications, factory automation, and possibly aerospace. Buy into or create joint ventures with other automakers, most likely in Europe.	Buy foreign software companies, particularly those involved in office automation, factory automation, and computer networks. Build more overseas plants.	Expand production around the world. Buy foreign computer and telecommunications companies that have global sales and distribution networks.	Buy foreign companies that have strong positions in computers, integrated circuits, medical equipment, telecommunications, ceramics, and superconductivity. Build more plants throughout the world.	Become a major global oil producer by buying proven oil reserves anywhere in the world, or foreign oil companies that have big reserves.

At Nippon Oil, Japan's largest petroleum importer, refiner, and marketer, you have to hunt for Mamoru Sugiyama, a director and head of finance. There is no receptionist in his part of the gloomy Nippon Oil headquarters in central Tokyo. Once found, however, he cheerfully insists that FORTUNE's list understates his company's wealth. He reckons Nippon Oil has $4.6 billion on hand. Half of that, about $2.3 billion, is currently earmarked for achieving the company's goal of becoming a diversified international oil company. The plan is simple: Nippon Oil wants to buy oil reserves, either in the ground or through acquisitions of companies with large reserves.

SOME CASH-RICH companies will use their money to get out of mature businesses into new fields. Matsushita Electric Works, an electronic-parts spinoff of Matsushita, is a prime example. Since nearly 70% of the parts it makes can be produced more cheaply in South Korea or Taiwan, the company is on the lookout for acquisitions and joint ventures, chiefly in computer networks and artificial intelligence.

Sanyo is branching out too. One of Japan's older electronics companies, it lost $130 million last year on sales of $8.8 billion. It has a product mix that is too dependent on the audio, video, and home appliance markets and has yawning gaps in such fast-growing areas as personal computers and telecommunications equipment. In an effort to catch up, Sanyo doubled research and development spending last year to nearly 4.5% of sales, set up a new business development unit, and is on the lookout for acquisitions both at home and in the U.S.

What kind of acquisitions? Says executive vice president Yasuaki Takano: "It's time for Japan to think about leisure time. Before, we thought only about electric appliances, but now we're thinking about our quality of life." As a first step, Sanyo has set up a venture with Misawa Homes, a leading residential builder in Japan, to work out designs for a house of the future. The company is looking for a large tract of land to build its dream houses. Though the Japanese have never been particularly known for gracious homes, Takano hopes to develop the new business on a global scale. "This will be a big pillar for future development of this company," he says confidently.

Japanese companies are also interested in buying affection. Charity, once considered *kankei-nai*—no relation—to Japanese companies, is now big business. Says a board member of one of the richest companies: "Our donations are going to be way up around the world." Then he adds, "Please don't print our name. If our name appeared, we'd be swamped."

Toyota's Ohshima sums up the position of Japan's super-rich with endearing frankness: "Japanese companies, I think, viewed corporate responsibility as something to fulfill by making quality products at low prices. Unlike the U.S., where there is a large gap between the wealthy and the poor, we are a homogeneous society. As a result, the Japanese have been slow in acquiring the philosophy that the rich must help the poor. When it comes to contribut-

Every copier company talks

We're doing something about

Choosing a new copier isn't easy. You look at copiers, you listen to promises. It all gets very confusing.

Now, you don't have to listen to a lot of talk about promises. You can read ours. Because we put it in writing. If you try to compare it to other copier guarantees, you'll find there's no comparison. Suddenly, a difficult decision becomes a very easy choice to make.

Look at the certificate above. Nobody offers you as good a copier guarantee as Harris/3M. So, while copier salespeople are all giving you a lot of talk, ours will give you something great to read.

Send in the coupon. Or give us a call at 1-800-TLC-COPY. (In Canada, 1-519-668-2230.) We'll send you our 8-page *Consumer Guide to Copiers*. Then, we can talk about it.

Harris/3M copiers have features for all sizes of offices. That includes the 6070. Seventy copies a minute, guaranteed.

ing to a better world, Japanese companies have good intentions but don't know how to best fulfill them. We are still groping for the answer."

TOYOTA has already made one change. "We used to give away money anonymously," says Ohshima. "Now the feeling is, if you are going to donate you must make it public, otherwise it's not worth it." Toyota now gladly reports that its charitable donations increased fourfold in the year ended June 30, to around $55 million. The emphasis was heavily on academic scholarships and endowments. General Motors last year gave away $57.3 million.

Matsushita unveiled a $25 million foundation in January, also weighted toward educational exchanges. Says Toshihiko Yamashita, former president and currently an adviser to Matsushita: "Japan is now a leading economic power in the world. It is time for us to act as a leading nation." Toshiba says its requests for money already make a five-foot stack. The company is developing a system of priorities. Adds Hitachi's Miyauchi: "We are one of the biggest companies in the world. We'd like to increase our charitable work. We should do it."

This brand of charity also involves a fair amount of self-interest. The Japanese want to smooth over any nasty ripples following big acquisitions or plant investments. Says Yoshio Nakamura, senior assistant director of international economic affairs of the Keidanren, Japan's premier business association: "If we don't pay attention to community relations in the U.S., we will lose a key factor in success."

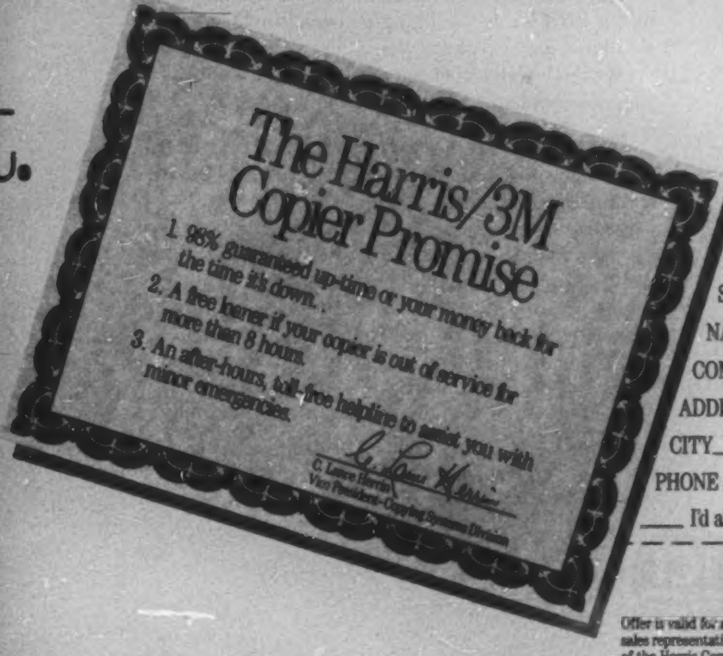
At the moment government tax breaks for donations are lower than elsewhere, with around 1.25% of pretax income deductible. Japanese tax law is unclear on whether overseas giving can be included in the deductible amount. The ministry for international trade and industry (MITI) is trying to get the ministry of finance to rule in favor of such deductions. If MITI succeeds, that should lead to a sharp increase in the number of Japanese bearing gifts abroad.

One thing rich Japanese companies do not worry about is being taken over by someone else. In the U.S. an underperforming cash-laden company like Sanyo would be a takeover target. Says John Connolly, chief investment strategist for Dean Witter: "On Wall Street nothing attracts a shark like green money or the red meat of losses." But in Japan about two-thirds of a company's shares are held by its bankers, customers, suppliers, and other friendly investors. "The individual shareholder is pretty far down the list of priorities in Japan," says the Harvard business school's Kester. Natori of the Industrial Bank of Japan agrees: "We don't have Western, America-style capitalism here. The company isn't just responsible to its shareholders, but rather to all its concerned parties." Matsushita's Honda says almost emotionally, "The life of a corporation should be eternal."

Will the Japanese continue to think that way? For now, it looks as if they will. But one Japanese top executive admits that he would like to adopt one American-style business practice—nicer offices. And maybe an extra pencil. ■

about customer satisfaction.

it.



The Harris/3M Copier Promise

1. 98% guaranteed up-time or your money back for the time it's down.
2. A free loaner if your copier is out of service for more than 8 hours.
3. An after-hours, toll-free helpline to assist you with minor emergencies.

C. Lance Harris
Vice President–Copying Systems Division

Yes, I'd like to know more about Harris/3M copiers and the Harris/3M Copier Promise.
Send to Harris/3M, P.O. Box 785, Dayton, OH 45401

NAME____________________________
COMPANY NAME____________________________
ADDRESS____________________________
CITY____________ STATE______ ZIP______
PHONE # (   )____________________________
____ I'd also like information on your fax machines. FT1121H2

HARRIS/3M

Offer is valid for a limited time and other restrictions and limitations apply; see your Harris/3M sales representative for details. ©1988 Harris/3M Document Products, Inc. Harris is a trademark of the Harris Corporation. 3M is a trademark of the 3M Company.

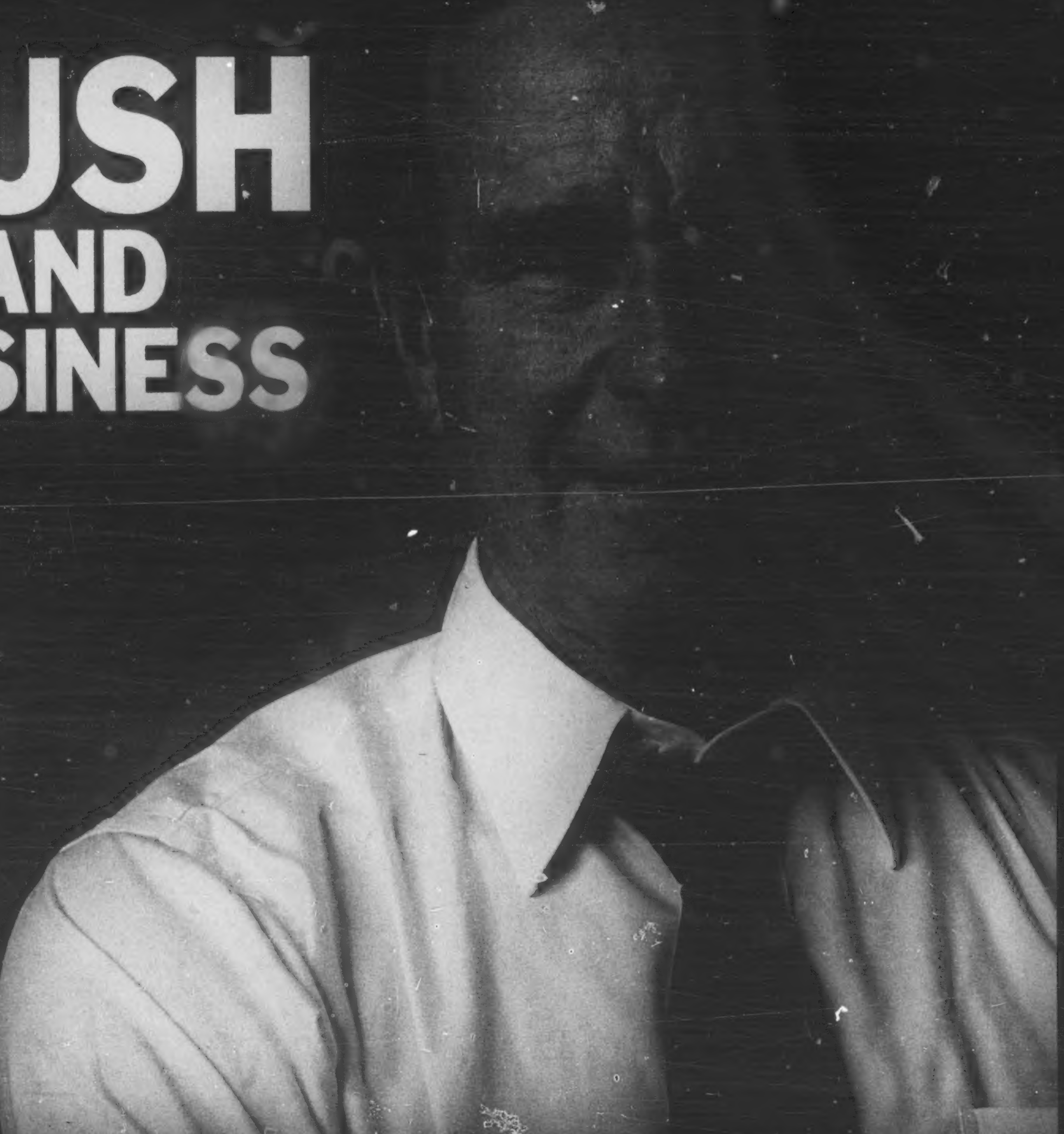
PRODUCTS OF THE YEAR   THE SEARS MESS   WHERE TO MAKE A

C89007-1
11/20/88

DECEMBER 5, 1988
$3.50

FORTUNE

BUSH AND BUSINESS



*105G********5-DIGIT 20814
*S99ES520S91*5 Y520814 JUN91
SRI CNGRSSN INFO SVC MDOOMA**
4520 EAST-WEST HWY *0199961
PL00224
BETHESDA MD 20814
0 724434 2

DECEMBER 5, 1988

FORTUNE

THE WHITE HOUSE

COVER: Michael O'Neill/Outline photographed the President-elect at Washington's Old Executive Office Building.

"I am no mystic, and my leadership will not be the most charismatic. But I'm not sure we need a lot of razzle-dazzle."

COVER STORY/PAGE 40

POLITICS & POLICY Cover Story

BUSH AND BUSINESS: WHAT HE WILL DO 40

He will propose many domestic programs, but he won't find it easy to pay for them. Expect a congressional stalemate, then a budget compromise. *by Ann Reilly Dowd*

THE ECONOMY

FORTUNE FORECAST: COUNT ON STEADY GROWTH 55

Business and consumers will keep the expansion rolling next year. The budget deficit will shrink—after a painful struggle. *by Todd May Jr.*

SELLING

WHY BIGGER IS BADDER AT SEARS 79

The world's largest merchant is under pressure from more efficient retailers. Management lacks the vision to change. *by Patricia Sellers*

PLODDING ALONG IN FINANCIAL SERVICES 84

PRODUCTS OF THE YEAR 89

The hottest, most innovative items on FORTUNE's eighth annual survey tend to be small, matte black—and alive. *by Edward C. Baig*

MANAGING

HOW THE WORKERS RUN AVIS BETTER 103

Employee ownership has been great for the No. 2 car renter. It could improve performance at other companies. *by David Kirkpatrick*

WHY THE TAX CODE ENCOURAGES ESOPs 110

REAL ESTATE

THE WAR AGAINST GROWTH HEATS UP 119

California natives who once embraced development now see it as a threat to their pleasant and prosperous way of life. *by Brian O'Reilly*

VOL. 118, NO. 13

"Can we retain our position as the world's premier retailer? Absolutely."

PAGE 79

"They're greedy bastards. Thugs in three-piece suits."

PAGE 119

"When you are in a knockdown, drag-out, you use whatever advantage you have."

PAGE 163

"People here just held on to their money. Now they know how to enjoy life."

PAGE 177

"It will make developing a room-temperature superconductor look trivial by comparison."

PAGE 185

"Some of them thought I was a hooker. But then I told them I was in advertising and they talked to me."

PAGE 215

CORPORATE PERFORMANCE

CABOT CORP.'S SMUTTY STORY 133

Can a new CEO save the day for the world's leading maker of soot? *by Stratford P. Sherman*

MONEY & MARKETS

WHY THE IRS MIGHT LOVE THOSE LBOs 145

Conventional wisdom says the tax man loses in leveraged deals, but a closer look suggests the wisdom could be wrong. *by John Paul Newport Jr.*

WILL THE YEN PUSH ASIDE THE DOLLAR? 153

Japan's financial leaders want their currency to have a larger global role. *by Carla Rapoport*

SERVICES

THE BIG COMEBACK AT BRITISH AIRWAYS 163

Who says a troubled airline can't learn to fly right? *by Kenneth Labich*

NEEDLE-NOSE CASH MACHINE 174

THE WORLD

TIGHTWAD TAIWAN STARTS TO SPEND 177

The island has become a hot market for Western—especially U.S.—goods. *by Ford S. Worthy*

WEALTH

WHERE THE NEXT FORTUNES WILL BE MADE 185

The secret: Spot a major trend and get in at the right moment. Think aging, information, and nanotechnology. *by Brett Duval Fromson*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 8

Directors in the hot seat, Soviets hunt headhunters, Wall Streeters hunt clays, bye-bye Mr. Banking, all the news that's fit to fax, where cash machines are hits—and misses, what to do about computer viruses, and more.

PERSONAL INVESTING 19

The best stocks for 1989 may come in small packages. *by Andrew Evan Serwer*

Also: Deere starts to harvest profits, the built-in safety of triple-net partnerships, and Portfolio Talk with investment strategist Greg Smith.

COMPANIES TO WATCH 140

FORTUNE PEOPLE 215

The Tennessee volunteer, return of the IBM prodigal, thumbing a ride in the ad game, the frequent buyer, and getting ahead by lying down on the job. *by Stephen Madden*

ON THE RISE 216

OTHER VOICES 219

How to streamline defense procurement when the system is burdened by 4,000 laws and 26,000 watchdogs. *by Norman R. Augustine*

Also: Why a big gas tax would help the deficit—and the automakers. *by Ernest J. Oppenheimer*

LETTERS TO FORTUNE 223

KEEPING UP *by Daniel Seligman* 229

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Ray Cave
CORPORATE EDITOR Gilbert Rogin

MAGAZINE GROUP
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr.,
S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr.,
Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS
Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck,
Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer,
Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr.
(European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis,
Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre,
Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen,
Rosalind Klein Berlin, Vivian Brownstein, John J. Curran,
Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss,
Brian Dumaine, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes,
Catherine Comes Haight, Gary Hector (Menlo Park, California),
Ronald Henkoff, David Kirkpatrick, Christopher Knowlton,
Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore,
Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly
(Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport
(Tokyo), Faye Rice, Louis S.Richman, Bill Saporito, Lenore Schiff,
Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully
(Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John Huey, John F. Lawrence,
Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J.B. Blank, Susan Caminiti,
Carol Davenport, Darienne L. Dennis, Alan Deutschman,
Alan Farnham, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton,
Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch,
Susan E. Kuhn, Julia Lieblich, Stephen Madden, Joshua Mendes,
David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt,
Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak,
Sarah Smith, Sally Solo (Tokyo)
ART STAFF Renee Klein, Leo F. McCarthy (associate directors),
Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman,
Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture
editors), Maureen Duffy Benziger, Christopher E. Green, Todd James
EDITORIAL OPERATIONS Donald G. Biglands (manager),
Carol Gwinn (copy chief), Charles Blackwell (deputy),
J. Randall Sizemore (technology chief), David Sloan (deputy),
Karen Andrews, Charles J. Attardi, Leslie Brenner,
Leon A. Douglas, Edith Firoozi Fried, Anne Glusker,
George J. Habit, Scott Kelliher, Daniel Lawrence,
Michelle Lockhart, Frances Owles, Mary Alice Rudovsky,
Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Maureen Mallon Cleen (director),
Guy Gleysteen (assistant manager)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Michael J. Clayton

U.S. ADVERTISING SALES DIRECTOR John E. Haire
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

ANDY FREBERG (2)

Editor Morrison after casting her secret ballot in Manhattan

ALMOST EVERYBODY loves to bash the media—and who are we to object if you knock our competitors? The public complains that in Election Year 1988 the press has concentrated too much on the tawdry, the trendy, and the trivial and too little on the tough issues. But whatever our flaws, you can't pin that rap on FORTUNE. Since back in October 1987, we have been concentrating on the issues: where the candidates stand on them and what they mean to you. FORTUNE's vote is in nobody's pocket. Many times aides to both George Bush and Michael Dukakis commended us for coverage that they found incisive, hard-hitting, and above all fair and balanced.

Forecaster May

Our own 1988 campaign manager has been assistant managing editor Ann Morrison. She directed our coverage to the issues most relevant to our constituents—taxes, trade, takeovers, child care, Social Security, among others. Says Morrison: "We focused on the economic assumptions and the economic ramifications of the candidates' programs."

A seasoned political reporter, Morrison wrote her first campaign stories in 1960 for the St. Mary High School newspaper in Westfield, Massachusetts. As for this year's race, she says, "Neither candidate marketed himself impressively." Morrison should know: Before taking charge of our Politics & Policy section in 1985, she wrote and edited dozens of FORTUNE marketing stories.

This issue closed barely 48 hours after the results rolled in. So we started even before the election and prepared *two* cover stories. Washington-based writer Ann Reilly Dowd analyzed how George Bush will act as President—particularly on business-related issues. Meanwhile, just in case the public opinion polls were wrong, Washington bureau chief Lee Smith prepared an article on what Michael Dukakis would have wrought. As soon as the Bush victory was clear, Dowd added reporting and Morrison put the final editing touches on our detailed cover story about the President-elect (see page 40). Smith took his also-ran role gamely. Says he: "Now I know how it feels to be Vice President."

Besides examining what George Bush will do for the nation, we analyze prospects for the economy. FORTUNE is the only mass-circulation magazine that makes its own economic forecasts, based on our own economic model developed by our own staff economists. On page 55 you will find the post-election forecast of chief economist Todd May, prepared with the assistance of economists Vivian Brownstein and Maureen Allyn and reporter Lenore Schiff. Their conclusion: Expect moderate growth next year and a rise in inflation to a worrisome 5½%. We invite you to read not only our forecast but also our lips: After making a brave attempt to hold the line, George will have to raise taxes.

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by Time Inc. Time Inc. principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. N. J. Nicholas Jr., President; Kevin D. Senie, Treasurer; Philip R. Lochner Jr., Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, FL 33630-0604. © 1988 Time Inc. All rights reserved. FORTUNE is a registered mark of Time Inc.

WHY THE SEC LOVES THOSE TAKEOVERS

■ Little appreciated fact: Whichever way a tender offer bounces, the SEC comes out a winner. Mandatory filing fees add millions to the federal coffers by way of a 0.02% cut the agency collects on the value of the initial offer (see table). If a suitor raises its bid, it pays nothing extra. When more than one company goes after the same target, each must pay the fee, win or lose. A suggestion: Raise the fee and take the SEC public.

– **Carrie Gottlieb**

THE HUNTER	THE TARGET	OFFER	SEC'S TAKE
KKR	**RJR Nabisco**	**$17,717,590,000**	**$3,543,518.00**
Philip Morris	**Kraft**	**$11,414,708,550**	**$2,282,941.71**
R.H. Macy	**Federated Dept. Stores**	**$5,270,075,000**	**$1,054,015.00**
Grand Metropolitan	**Pillsbury**	**$5,234,470,000**	**$1,046,894.00**
Eastman Kodak	**Sterling Drug**	**$5,093,071,9[illegible]**	**[illegible]1,018,614.39**
Batus Financial Services	**Farmers Group**	**$4,415,300,550**	**$883,060.11**
Campeau	**Federated Dept. Stores**	**$4,251,681,100**	**$850,336.22**
Morgan Stanley, et al.	**Fort Howard**	**$3,578,729,000**	**$715,745.80**

much a company pays Russell Reynolds to do the hunting. It was never clear why the six wanted to know, but they scribbled the answers in their notebooks.

"It was an interesting situation," says Henry de Montebello, a managing director of the firm. "They were well briefed, and there were no dumb questions. The only thing that seemed to surprise them was the level of compensation for our recruits." No wonder: 70% of Russell Reynolds's captured heads in the U.S. get more than $100,000 a year. Russians make an average of $4,212 a year.

The delegation went back to Moscow without signing Reynolds to do any headhunting. A 1987 Soviet decree forbids noncitizens to hold chief executive jobs even in joint ventures with foreign companies, several of which are in the offing. **Eastman Kodak**, **Ford Motor**, **RJR Nabisco**, **Archer-Daniels-Midland**, **Chevron**, **Mercator**, and **Johnson & Johnson** recently formed something called the American Trade Consortium to negotiate joint ventures with the Russians.

The current freeze on foreign bosses could thaw. Says Alexander Yakovlev, a Washington-based Soviet trade deputy: "I see no reason the high-level managers must be Soviets. The U.S. is state No. 1 in the world in management. Americans have experience." – **Edward Prewitt**

USER-FRIENDLY SHOPPING CARTS

■ Can't find the ravioli? Push a couple of buttons and your shopping cart will point the way. In what just could be the most radical breakthrough in supermarket shopping since automated checkout, **Information Resources** of Chicago has developed carts with video display screens that help shoppers find what they're looking for—and flash advisories regarding the daily specials.

The company is testing its Videocart at a **Dominick's Finer Foods** supermarket in Westchester, Illinois. "The response has been excellent," says Larry Nauman, a Dominick's spokesman. The cost of the carts is covered by advertising paid for by the makers of different products. They pay $4 for every 1,000 display exposures. In addition to carrying the ads and the where-did-the-ravioli-go? feature, the videos can be switched to trivia games, a selection of recipes, or a printed local news and weather update while you wait in the checkout line.

Some bugs remain. Of the 12 carts put out on the first day, only nine made it through closing. The others were victims of software glitches. Nevertheless, Information Resources now will be testing its video carts in supermarket aisles in Chicago, Atlanta, and Los Angeles. It hopes to go national by the end of next year. – **W.E.S.**

The Szafranskis go to market.

MICHAEL L. ABRAMSON

STEVEN PUMPHREY

Gonzalez and his wife, Bertha.

BYE-BYE, MR. BANKING

■ Voters in Rhode Island have created a job opportunity for Congressman Henry Gonzalez (D-Texas). In November they bounced their 14-term Congressman Fernand St Germain in favor of his Republican challenger, and in doing so emptied the chairmanship of the House Banking Committee. Gonzalez is the likely successor. The Senate Banking Committee needs a new chairman too. Senator William Proxmire (D-Wisconsin) did not run for reelection.

Near term, this is probably good news for commercial banks—if only because it means no news of any imminent legislation that would interrupt their incursion into the securities business. St Germain was especially keen to impose such a limit. The dictatorial "Mr. Banking," as he was known, once predicted he would have restrictive banking legislation on its way "before the snows melt next year."

spots. The targets, released by hidden machines, take off in far less predictable patterns, sometimes at knee height or ground level.

"It's becoming the 'in' thing," claims Walter Neff, vice president of sales at Kidder Peabody, who just returned from an African hunting safari. Hunters like Neff enjoy sporting clays because they get an opportunity to practice in the off-season. Says Bob Davis, chairman of Houston's Dove Oil & Gas: "This is a thinking man's sport." Others enjoy it because it's challenging, bloodless, and an enjoyable way to entertain clients. **– C.G.**

PATCHY APPLAUSE FOR CASH MACHINES

■ In Iowa City students use automated teller machines to pay college tuition, transferring money to the University of Iowa's account. In Texas and Louisiana, **SouthWest Airlines** sells standby tickets through ATMs in convenience stores.

Along with shifting cash from a savings account to checking and other conveniences, these uses represent a logical progression in the proliferation of ATMs. But a recent 25-city study by Ohio-based Impact Resources shows the 70,000 ATMs in the U.S. are used far less than might be expected, even in major cities like Chicago (see table).

Reason: In Illinois and some other states, banking laws designed to protect small banks have had the side effect of limiting the number of ATMs. California has more ATMs per person than anywhere else because regulations encourage banks to build a statewide presence. Cleveland's surprisingly strong showing is probably due to an ad campaign by **Ameritrust** that encouraged the elderly, usually reluctant, to use ATMs. **– F.H.K.**

JIM HEEMSTRA—PICTURE GROUP

Coeds at the University of Iowa use ATMs to pay for college.

WHERE ATMs ARE USED

% of people who are regular users

MOST	**San Francisco**	**34.9%**
	Cleveland	**34.6%**
	Atlanta	**29.0%**
	Seattle	**27.2%**
LEAST	**Kansas City**	**14.9%**
	Chicago	**15.7%**
	St. Louis	**16.9%**
	Milwaukee	**18.4%**

WHAT TO DO ABOUT COMPUTER VIRUSES

■ Ever more fearful that a virus could invade their computer systems, U.S. companies are turning increasingly to security specialists and asking for help. Cris Castro, director of information security at **SRI International**, says the privately held Menlo Park, California, research and consulting company is getting 30 calls a day.

MARTY KATZ—

Hacker Morris

The sudden alarm comes in the wake of Robert Morris Jr., a 1988 Harvard graduate now studying at Cornell. His alleged invasion of the Internet computer network unleashed a virus that disrupted government and university research systems nationwide.

But hackers, as computer buffs are known, aren't the only danger to computer systems, according to Noel Matchett, president of Information Security, a private, Silver Spring, Maryland, consulting firm. He believes disgruntled employees and unscrupulous competitors present an even bigger threat.

"No computer system is foolproof," says Edward Boudreau Jr., former head of technology for John Hancock, who is now president of the company's investment advisory subsidiary. "We do spend some time agonizing over that issue."

But there are several steps companies should take to make themselves as safe as possible. Among them:

- Change employee passwords at least several times a year and revoke them immediately after someone leaves or is fired.
- Make copies of important files and store them in restricted safes.
- Encode sensitive data, making it meaningless to anyone without the code.
- Have a backup computer system on hand that would provide uninterrupted service in case of an emergency.
- Use different computer systems for various corporate departments, separating finance from purchasing, for example.
- Test new software and personal computers for bugs before they are distributed.
- Restrict access to confidential information and enforce need-to-know ground rules.
- Make sure your programmers have plugged all routes into the system to prevent outsiders from entering—as Robert Morris seems to have done. **– C.G.**

SIGNALS

■ Bermuda will probably see many more U.S. visitors doing their best to mix business with pleasure. An October tax treaty lets U.S. companies pick Bermuda for meetings and deduct the cost without having to prove to the IRS that they couldn't have done their business anywhere else—as they must for most other foreign countries. F

NOW HEAR THIS

■ **BORIS GOSTEV,** 61, minister of finance for the Soviet Union, on why he may levy new taxes on companies that let pay rise faster than productivity:
"As Keynes said, there's no more destructive power than excessive wages."

■ **RICHARD BRANSON,** 38, founder of Virgin Group, on why he is taking the British communication and entertainment company private after taking it public just two years ago:
"There's no such thing as a friendly shareholder."

■ **WILLIAM McCORMICK,** 44, chief executive of Fireman's Fund Insurance, which won't write or renew auto coverage in California after the passing of a proposition to cut rates over 20%, on the man who inspired the referendum:
"We'll tell our policyholders to call Ralph Nader."

HOW THE WORKERS RUN AVIS BETTER

Employee ownership is the best thing to happen to the No. 2 car renter in a long time. For a lot of companies it could be the key to better performance in the Nineties. ■ *by David Kirkpatrick*

Chief Joe Vittoria gets out often to talk with fellow owners like bus driver Marcos Santiago.

A YEAR HAS PASSED since the employees bought Avis, and when Chairman Joe Vittoria isn't out pumping the troops for ideas to help improve customer service he is often fielding inquisitive calls from executives of major corporations. With 12,500 employees, Avis is the best-known company in America fully owned by an employee stock ownership plan, or ESOP. Vittoria, 53, says Avis's success with the plan has executives from "much bigger" corporations thinking seriously about creating one themselves.

It's easy to see why. As America moves toward a more service-oriented and highly leveraged economy, ESOPs seem made to order. Employee ownership has proven particularly effective in motivating workers to provide extra effort in customer service. Provisions in the tax code render debt a lighter burden on ESOP-owned companies than on conventional competitors (see box). ESOPs have been around a long time, and most own only a small percentage of a company's stock. But 1,500 companies, with 1.5 million employees, were majority-owned by ESOPs at the end of last year, and the number is growing.

Those curious corporate callers hear nothing but encouraging words from an enthusiastic Vittoria. "Believe me, the ESOP works, and it works very well," he exults, sitting in his large but spartan office at headquarters near New York's Kennedy Airport. In typically frugal Avis style, the room appears not to have been redecorated since Avis moved in 21 years ago. The tall, folksy CEO proudly reports that operating profit for the first six months of 1988 rose 35% over the same period in 1987, when Avis was owned by Wesray Capital, an investment firm that purchased it in 1986. (Operating earnings for 1987 totaled $177 million on revenues of $971 million.) By year-end Avis will have repaid about $90 million of the $650 million the ESOP buyout added to the company's debt obligation—more than double the projected repayment.

"Right now Avis is on a roll," says Charles Finnie, an analyst at the Baltimore brokerage Alex. Brown & Sons, who is widely considered the country's most knowledgeable observer of the rental-car industry. "The ESOP has really improved their morale and productivity and service." Avis's share of the brutally competitive airport market, where 70% of all car rentals take place, is up a point to about 27%, and all internal measures of service quality are setting records. On-time arrivals of airport buses have risen from 93% to 96%, for example. Service-related customer complaints were rising at the time of the employee buyout but have subsequently dropped 35%, from 1,918 in the 12 months ended in August 1987 to 1,238 a year later.

The lesson from Avis is not that an ESOP is a quick fix. Says Vittoria: "Just

REPORTER ASSOCIATE *Susan Kuhn*

PHOTOGRAPH BY JONATHAN LEVINE

creating an ESOP isn't going to make you a better company. It's how you involve the employees, it's how you maintain a dialogue, listen to their input, and use it." Since the buyout, Avis has organized employee participation groups as a conduit for ideas, and everything from billing to bathrooms to baby seats is changing as a result. Corey Rosen, executive director of the National Center for Employee Ownership, a nonprofit research group in Oakland, California, applauds Avis's effort to increase employee involvement. But he is frustrated that it is still unusual. Most ESOP executives mistakenly believe employee ownership alone will boost productivity, and shun participative programs.

The center's research has found that if an ESOP-owned company allows workers to participate in decisions about their jobs, it will grow an average of 11% faster than if it doesn't. Says Rosen: "An employee comes to work and is motivated as an owner, but that motivation is useless unless there's a structure to use the ideas, experience, and knowledge he or she has. And Avis has taken all this to heart." Rosen believes employee involvement programs can be helpful in any company but are more likely to succeed with employee ownership.

THE TEN LARGEST ESOP-OWNED COMPANIES

COMPANY	BUSINESS	% ESOP-OWNED	ESOP BEGUN	EMPLOYEES
HealthTrust Nashville	Hospital management	100%	1987	23,000
Avis Garden City, N.Y.	Car rental	100%	1987	12,500
EPIC Healthcare Group Dallas	Hospital management	100%	1988	10,000
Amsted Industries Chicago	Diversified manufacturing	100%	1986	8,300
Avondale Industries New Orleans	Shipbuilding	60%	1985	8,000
Parsons Pasadena, Calif.	Engineering & construction	100%	1974	8,000
Weirton Steel Weirton, W.Va.	Steel manufacturing	100%	1984	8,000
Dan River Danville, Va.	Textiles	100%	1983	7,000
Austin Engineering Austin, Texas	Construction	60%	1987	6,500
Wyatt Cafeterias Dallas	Cafeterias	100%	1988	6,500

SOURCE: NATIONAL CENTER FOR EMPLOYEE OWNERSHIP

Wesray Capital and senior Avis managers had bought the company, then part of Beatrice Cos., from Kohlberg Kravis Roberts & Co., the leveraged-buyout firm that controlled Beatrice. Led by Wesray Chairman Ray Chambers, the group paid $1.6 billion in July 1986 and after selling off some assets sold Avis to the ESOP for a stunning $740 million profit just over a year later. (Former Treasury Secretary William E. Simon, the WES of Wesray, withdrew from active involvement before the Avis purchase.)

IN THIS TYPE of leveraged deal, an ESOP borrows the money to buy the company, or part of it, in the name of the employees. A trustee holds the shares and is mandated to represent the interests of the eventual shareholders. As the company pays off the debt, shares are allocated to employees in proportion to their pay. Managers receive shares in the same proportion as car cleaners, but federal law restricts anyone from receiving an allocation of more than $30,000 of ESOP stock in any given year. By the end of this year, employees at Avis will own about ten shares per $1,000 of annual compensation.

Vittoria predicts that within 15 to 18 years all 24 million shares will be held by employees, who must remain at least five years for their shares to be vested. An outside appraiser appointed by the trustee values the shares annually. The current value is $5.22, which will certainly rise this year to reflect the company's impressive performance. Even after shares are awarded to an employee, the trustee holds them. When a vested employee leaves the company for any reason, the trust buys out the shares at the most recently assessed price (with the full value of the payout as taxable income to the employee).

"We're going to give a lot of people an opportunity to build a nest egg here that they would never have been able to build in their lives," says Vittoria. That's just what Louis Kelso had in mind. As the inventor of the ESOP and its indefatigable advocate, he passionately believes that capitalism will not survive unless capital ownership is more evenly distributed across the economy. He declares: "For employees of service enterprises not to have a piece of the action is almost another form of slavery."

Kelso, 74, finds it inexcusable that all leveraged buyouts don't have at least an ESOP component. He says that the first ESOP buyout he orchestrated—at Palo Alto's Peninsula Newspapers in 1956—was the first LBO. He also claims that in about 1964 he introduced LBOs to George Roberts, who was courting the niece of one of Kelso's law partners, and to Roberts's friend Jerome Kohlberg. "I taught them the art of the leveraged buyout. Now they're just using it for the wrong purposes, to make themselves and a few people richer," laments Kelso. Kohlberg and Roberts have no comment.

DESPITE Avis's success at rousing employees with the plan, they would never have become owners were it not for the generous tax benefits Kelso has won for ESOPs over the years. In the early Seventies he convinced Russell Long, then the potent chairman of the Senate Finance Committee, that employee ownership was good for the economy. Long helped write a succession of bills that aided ESOPs. Lenders to an ESOP pay taxes on only half the interest they receive and can thus charge lower rates. Avis routinely carries a huge debt in connection with its fleet of vehicles—about $1 billion at the time of the deal. The management figured a way to include that sum in the tax-favored ESOP debt. Result: The company significantly lowered its cost of doing business.

Another major concern for Vittoria was to get Avis off what he and everyone else there call its "merry-go-round" of owners,

OWNERS AT WORK IN FORT LAUDERDALE

Whether they fix cars, clean them, or serve travelers at the airport, Avis employees really do seem to try harder now that they own the place. Customers have noticed the difference.

ten since it was founded in 1946 and five (Norton Simon, Esmark, Beatrice, KKR, and Wesray) in the five years before the employee buyout. Vittoria, who had been CEO of Hertz, arrived at Avis in 1982. Managing for a different owner each year had been enormously frustrating. One solution would have been taking the company public, but Vittoria worried that public ownership could have left the company vulnerable to another takeover. The first time he ever heard the term ESOP was in a meeting with Wesray investors. Other Avis executives remembered considering an ESOP back in 1977, before Norton Simon bought the company. Once it became clear that the fleet debt would qualify for the ESOP tax advantages, Wesray's partners at Avis began pushing for employee ownership.

AVIS ALREADY had a fine reputation for service, and its share of the crucial on-airport market was edging up, while Hertz's dropped from 37% to 32% between 1982 and 1987, according to Finnie of Alex. Brown. He adds that Avis also had the best operating margins among the largest rental companies. Since all of Avis's major competitors have changed hands recently and as a result increased their debt loads, that extra ESOP debt was not much of a competitive disadvantage.

The biggest surprise about employee ownership at Avis is how effective it has proven as a marketing tool. Even before the deal was complete, James Collins, Avis's vice president for sales and marketing, suggested to ad agency Backer Spielvogel Bates that the ESOP might be a good advertising hook. Backer's staff was skeptical. But when the agency commissioned a study of 1,000 typical car-rental customers it found an astonishing 77% believed that employee ownership would mean better service. Says Collins: "The number knocked our socks off."

"Employee ownership translates into an amazing halo," says Randy Hackett, Avis's account manager at Backer. The agency produced a series of television commercials and print ads showing eager workers and announcing, "Avis is the only major rent-a-car company owned by its corporate employees." A new version of the company's famous tag line announces, "We're trying harder than ever." Independent tests found the copy more effective at swaying consumers than any Avis ad Backer had ever produced. Follow-up studies conducted after the commercials began airing this spring showed a dramatic increase in favorable perceptions of Avis. Even Craig Koch, president of Hertz's North American division, a man singularly unimpressed by the new Avis, concedes, "The only advantage I see to the ESOP is that it gives them a good advertising campaign. It's something consumers will listen to."

SOME LARGE corporate customers are listening. Says Robert W. Anderson, director of corporate travel for Unisys, which splits its $15 million in annual car rentals between Avis and Hertz: "Employee ownership has got to be a winner. Avis is absolutely superior in customer service, though they were pretty good to begin with." When Westinghouse named Avis its primary car-rental supplier in April, every Avis employee in Pittsburgh, where Westinghouse is based, signed a letter to travel managers there pledging to provide the best possible service. "We were really impressed," says Betty Lou Luketich, manager of business travel. "When employees own a company there is a definite difference in their attitude. Our travelers say they have noticed."

Avis employees show a palpable enthusiasm for the changes that have come since the ESOP. Fears of pay cuts and layoffs have proven groundless, and managers no longer

HOW THE TAX CODE ENCOURAGES ESOPs

- When an ESOP borrows to buy stock, not only are the interest payments tax deductible—so are repayments of principal.
- A commercial lender may exclude from taxable income 50% of the interest earned from loans to an ESOP. Most lenders pass part of this saving on to the ESOP.
- Dividends paid on stock that is held by an ESOP can be deducted from corporate taxable income.
- Owners of privately held corporations who sell their shares to an ESOP can defer the capital gains tax if they reinvest the gains in the stock of a U.S. corporation within a year.

worry that the new owners beneath them might prove unruly and unmanageable. Though employees still hold little stock, most are impressed with the company's more open management style. Many refer with satisfaction to the advertising campaign, and a striking number tell inquiring visitors, "We're trying harder than ever."

"We feel we have closer contact with management," says Roberta Beckelman, a telecommunications specialist at Avis's Worldwide Reservations Center in Tulsa. "We're ready to voice our opinions, and we know we will be heard if we do." John Sellers, director of reservations at the Tulsa center, concurs. "In the past, people felt management couldn't really listen to their ideas because we weren't in control of our own destiny," he says. It's easier to manage now: "We've seen a reduction of lost time, and we've actually had employees coming to us asking us to tighten some of our performance standards. That would never have happened prior to the ESOP."

Even employees with gripes give the company a break. Mike Trissel, an Avis bus driver at Fort Lauderdale International Airport, is unhappy that the company insisted on bonuses rather than wage increases in recent local union negotiations. "I feel we should have at least gotten a cost-of-living raise," he says, "but I can see they have a large debt now, and they want to pay it off as soon as they can." And Trissel adds: "Everything else here is 100% positive."

Though some ESOPs exclude union members, Avis decided to make its 2,800 unionized employees owners too. "We wanted to have everybody on the same team and not create two classes of people," says human resources vice president Donald Korn. Negotiations have been a bit more cordial since the buyout. Union officials seem generally pleased with the plan, since it required no explicit concessions on their part, but several worry that Avis, like many ESOP-owned companies, may eventually try to substitute the ESOP for pension benefits. Avis says it retains the option to change pensions. The union officials say they would fight to prevent that.

JIM KAMP—BLACK STAR

AVIS #1 IN FLORIDA

Employees meet regularly (above, in Fort Lauderdale) to make worker ownership work.

Employee participation groups comprising representatives from each job category now meet at least monthly at each of Avis's company-owned locations in the U.S. (employees at the many smaller franchise locations are not included in the ESOP). Scores of valuable ideas have surfaced. A sales staffer suggested that the Avis sales force could use an internal charge card instead of American Express when renting Avis cars on the road. The switch saved the transaction fee paid to American Express as well as the concession fee Avis pays to the airport for every paid rental. Says field operations vice president Robert Salerno: "That's maybe another $30,000 or $40,000 that just went to the bottom line."

Employees don't just make suggestions—they follow up. Says Avis Fort Lauderdale district manager Dan Falvey: "In many cases people will go out on their own time and get prices on materials for some idea they've had and come back to the committee and say, 'Hey, should we do it?' And we make the decision as a group. We're not sitting there as managers and employees. We're sitting there as a group of employees in Fort Lauderdale, asking how can we provide better service." They must be coming up with good answers. Since the ESOP purchase Avis has beaten Hertz in Fort Lauderdale market share for the first time ever.

Falvey has to watch himself, though: "If I as the district manager decide to get a new carpet for the office, employees will now come up to me and say, 'Wait a minute, how much is this costing us?' They're half kidding, but the whole message of the ESOP is that you are an owner. We pay off the debt—we own a piece of this company."

Operations chief Salerno says the manager's role is changing. "This whole participation process has put a lot of burden on management to get the people involved and interact with them," he says. "So we're starting a new program for managers on how to deal with people. It takes a lot of work and pressure to instill this thing in the whole company. We don't want people to think it's today's fad, and in a month it'll be gone."

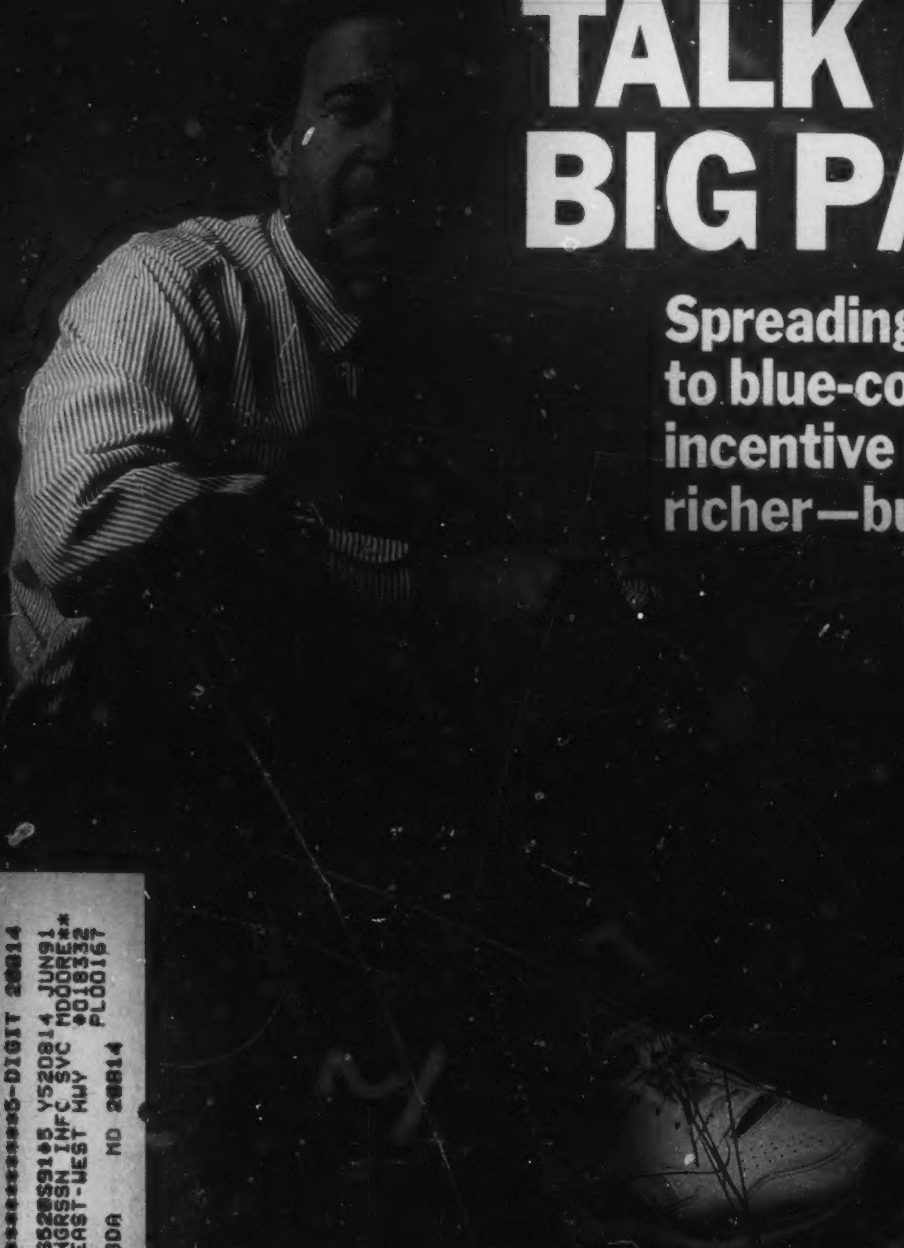
VITTORIA, Salerno, and others criss-crossed the country after the ESOP buyout, meeting face-to-face with about 7,000 employees. Top executives still meet regularly with representatives of the participation groups and circulate among employees at all levels. Vittoria says he has respected the knowledge of front-line employees ever since he started in the business in 1960, as a rental agent for Hertz in New York City. "I've always been a believer in visible management, but now I'm doing it more because it has greater value," he says. "This is not the time for management to start taking vacations. I've worked harder since this ESOP was formed than I have in many years." So have a lot of other Avis employees, it appears. They may not have imagined that this would be part of becoming capitalists, but the results are hard to argue with. ■

C8900-5
12/8/88

■ THE ACCOUNTANTS WANT TO CUT YOUR PROFITS • DRUG TESTS: GOOD OR BAD? ■

EMBER 19, 1988
$3.50

FORTUNE



TALK ABOUT BIG PAY!

Spreading fast from boss to blue-collar worker, incentive pay promises richer—but riskier—rewards

Reebok CEO Paul Fireman's bonuses can jump up and down like his shoes. Last year's extra: $15 million

*1056*************5-DIGIT 20814
*S99ES520S91*5 Y520814 JUN91
SR1 CNGRSSN INFC SVC MDOORE**
4520 EAST-WEST HWY *018332
PL00167
BETHESDA MD 20814

DECEMBER 19, 1988

FORTUNE

MARK SELIGER

"We wanted to minimize our risk as well as create a potential for unlimited incentive."
COVER STORY/PAGE 50

COMPENSATION/Cover Stories

HERE COME RICHER, RISKIER PAY PLANS 50

From top to bottom, companies are rewarding workers who perform and docking those who do not. *by Nancy J. Perry*

WHERE'S THE RISK IN CEOs' REWARDS? 62

Often there isn't any. That means trouble as more companies ask employees to put their pay on the line. *by Graef S. Crystal*

MEET ONE BIG BONUS BABY 66

COVER: Mark Seliger photographed Reebok CEO Paul Fireman outside the company headquarters in Canton, Massachusetts.

CORPORATE PERFORMANCE

THIS CAT IS ACTING LIKE A TIGER 69

Caterpillar has beaten back the Japanese. The quintessential Midwestern metal basher is bulldozing into new markets and heading for a record year. And by the way, it is revamping every plant in the company. *by Ronald Henkoff*

THE STRANGE FOLKS PICKING ON ZENITH 79

His once proud TV business at a nadir, Chairman Jerry Pearlman keeps blaming foreigners. A taciturn trio who own 6% of the stock think the trouble lies closer to home. *by Lisa Kartus*

MONEY & MARKETS

WILL 'FASBEE' PINCH YOUR BOTTOM LINE? 93

Businessmen worry that the Financial Accounting Standards Board is going to cost them billions. It's out of control, says Citicorp's John Reed. Really? *by Carol J. Loomis*

MANAGING

WHAT DO YOU DO FOR AN ENCORE? 111

A company that scores one big success should start thinking right away about the next one. Here's how to write a second act in American business. *by Joel Dreyfuss*

IS DRUG TESTING GOOD OR BAD? 133

Businesses, including half of all major U.S. corporations, will spend $200 million this year on urine tests that are not foolproof. Still, for some companies, particularly those involving public safety, testing makes sense. *by Andrew Kupfer*

VOL. 118, NO. 14

"Almost overnight the whole world changed for us."

PAGE 69

"We're spending millions on this. It's a rip-roaring pain in the behind."

PAGE 93

"Going against a company like P&G, you can't make mistakes or you'll be buried in six months."

PAGE 111

"I always control the stock—and I always have the last word."

PAGE 157

"I've fired people before for not being sincere, and I'll do it again."

PAGE 175

"Wouldn't it make more sense to have a hospital with a department simply called Backs, or Feet?"

PAGE 183

BANKING

HOW TO RESCUE THE S&L INDUSTRY 143

Expect fast action from the new Administration and Congress on the thrift crisis. But even $60 billion won't cure the basic structural problems. Put this sick critter to sleep. *by Gary Hector*

TAXES

WATCH OUT FOR THE 15% PENSION TAX 153

You probably have a nasty surprise coming if you stashed away a large pension pile: a hefty surtax on any payout over $150,000 a year. You may be able to limit the damage—but you have to act fast. *by Arlene Hershman*

COMPETITION

MERGER MANIA IS SWEEPING EUROPE 157

The Continent is learning how to wheel and deal, with acquisitions in Britain and France setting new records. No combination seems too far out. Even hostile takeovers are in. The companies that emerge will be tougher for the rest of the world to compete against. *by Richard I. Kirkland Jr.*

FIVE EUROPEAN MANAGERS WHO MADE A DIFFERENCE 166

SERVICES

WHY IS AIRLINE FOOD SO TERRIBLE? 169

If you eat the mystery meat underneath the glutinous gravy, you are partly to blame. So are managers who labor under the illusion that they are in the transportation industry. They are really in the service business. *by Monci Jo Williams*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 8

Canada votes for free trade, turbulence over air fares, what's hot and what's not, and more.

FORTUNE FORECAST 29

Capital spending is heading for a long, strong roll. *by Maureen F. Allyn*

PERSONAL INVESTING 33

A warm tip from Warren Buffett: It's time to buy Freddie Macs. *by Brett Duval Fromson*

Also: Another look at surging Japanese stocks and Portfolio Talk with John Maurice.

COMPANIES TO WATCH 90

FORTUNE PEOPLE 175

Thomas Monaghan's pizza pie in the sky, a Ford moonlighter, and more. *by Stephen Madden*

ON THE RISE 178

BOOKS & IDEAS 179

Is Japan a friend or a foe? *by John Starrels*

OTHER VOICES 183

Piercing the ultimate Japanese trade barrier—the distribution system. *by C. William Verity*

Also: Why America's grand health care revolution failed. *by Regina Herzlinger*

LETTERS TO FORTUNE 189

KEEPING UP *by Daniel Seligman* 193

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Ray Cave
CORPORATE EDITOR Gilbert Rogin
MAGAZINE GROUP
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, John J. Curran, Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (Menlo Park, California), Ronald Henkoff, David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S.Richman, Bill Saporito, Lenore Schiff, Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John Huey, John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J.B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Alan Farnham, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Stephen Madden, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo)
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Todd James
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Karen Andrews, Charles J. Attardi, Leslie Brenner, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, George J. Habit, Scott Kelliher, Irene Lacher, Daniel Lawrence, Michelle Lockhart, Frances Owles, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Maureen Mallon Cluen (director), Guy Gleysteen (assistant manager)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Haire
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

ANDY FREEBERG

Not really an eccentric, Loomis knows her numbers.

WE AT FORTUNE like nothing better than to tip you well in advance to favorable trends and happy surprises. But sometimes, like a loyal friend, we must also warn you of things that might go bump on your balance sheet. Did you know, for instance, that you may be stung with a stiff extra tax on your own pension benefits? For the particulars, and ways to limit the damage, see page 153, "Watch Out for the 15% Pension Tax." And were you aware that the little-known but all-powerful Financial Accounting Standards Board is readying new rules that may cut the profits your company can report to shareholders? I commend to you the story by Carol J. Loomis on page 93, "Will 'Fasbee' Pinch Your Bottom Line?"

It's hard to think of anyone better than Loomis, the winner of 12 awards for her distinguished journalism, to decode the mysteries of accounting. Jokingly placing herself on the "eccentric fringe" of society because she finds accounting so appealing, she is as comfortable with a corporate 10-K report as with a novel. The combination of her numerate insights and literate writing is what makes the prototypical Loomis story so inviting. Notes her story editor, Edmund Faltermayer: "If it's possible to see the poetry in accounting, Carol Loomis is the one to do it."

In previous stories, Loomis unearthed questionable accounting practices at Aetna and a deceptive financial transaction at Fireman's Fund. Her work led to investigations by regulators and tightened reporting policies for all insurers.

To Loomis, accounting's allure is its underlying rationality. But all is not black and white. She and reporter Reed Abelson sat in on a number of sessions where FASB's seven members deliberated proposed rules. Says Loomis: "The process is much more organized and intelligent than, say, it is in Congress. Yet you see the members' doubts and frustrations hanging out. You see them crawling to a conclusion and acknowledging in some instances that it isn't going to please their constituents." You may not be pleased by all you read in Loomis's story, but I think you'll find it most valuable.

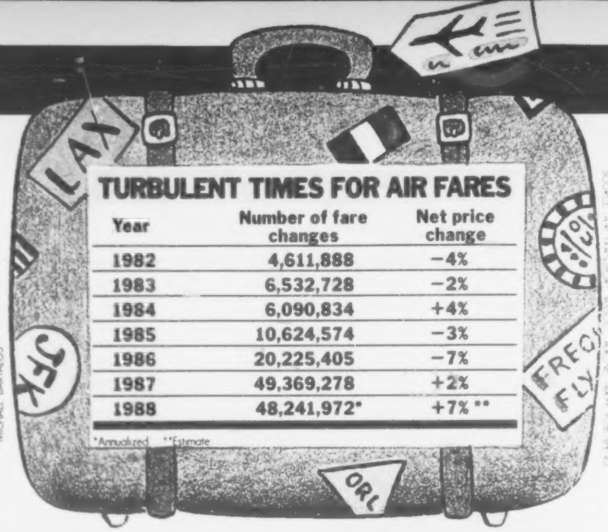
IAN BRADSHAW

European editor Kirkland

Meanwhile, European editor Richard Kirkland comes in with another valuable warning: Merger mania is sweeping Europe, creating huge companies that will be tougher to compete against. In the story on page 157, Kirkland reports that the driving force is not so much raiders' desire for financial gain as managers' drive for competitive advantage.

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by Time Inc. Time Inc. principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. N. J. Nicholas Jr., President; Kevin D. Senie, Treasurer; Philip R. Lochner Jr., Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, FL 33630-0604. © 1988 Time Inc. All rights reserved. FORTUNE is a registered mark of Time Inc.



TURBULENT TIMES FOR AIR FARES

Year	Number of fare changes	Net price change
1982	4,611,888	−4%
1983	6,532,728	−2%
1984	6,090,834	+4%
1985	10,624,574	−3%
1986	20,225,405	−7%
1987	49,369,278	+2%
1988	48,241,972*	+7%**

*Annualized **Estimate

MICHAEL BARTALOS

SOURCE: AIR TRANSPORT ASSOC., AIRLINE TARIFF PUBLISHING CO.

The Gallo scientists are now examining the cells of children of alcoholics to see if they can find conclusive proof that alcoholism is hereditary, as previous research has suggested. The studies, says Dr. Carlton Erickson, executive director of the Texas Research Society on Alcoholism in Austin, "enhance evidence that alcoholism is a disease, not a character defect." The American Medical Association and many others already believe this. Conclusive proof, however, will be needed to convince the doubtful—and to encourage further spending on research. Erickson says treating alcoholism as a disease would benefit employers in many ways. For one thing, they would save money on retraining new employees.

– Frederick Hiroshi Katayama

WILL VAN OVERBEEK

Erickson in his Texas lab

AIR FARES: UP, UP ... AND DOWN AGAIN?

■ Do the recent air fare hikes really mean all that much? Industry security analysts say they are nonplused by the blaring headlines that followed the wide cancellation of discounts in November. "It ain't front-page news," says Kevin Murphy, who covers airlines for Morgan Stanley. "It's happened before."

Indeed it has, on an almost seasonal basis, in the ten years since deregulation began. In the fall of 1986, for example, **American Airlines** led the way and many others followed suit. The next January, **Continental Airlines** reintroduced discounts—and others quickly did the same. Now, led by Continental, the industry is imposing another round of increases that probably will last through the holidays and into 1989, only to soften.

Business travelers spend about $35 billion a year on domestic flights, 20% on trips arranged within seven days of takeoff time. Such trips have been hit hardest by the price increase, which will raise these fares by about 30%. Even so, air travel remains a better bargain than before deregulation: Prices have risen at half the rate of the consumer price index. Fine-tuning to try to maximize profits, the airlines make fare changes by the millions without great effect on prices (see table).

The heads of many corporate travel departments believe fares might drop again in the new year—marginally if the economy is strong, dramatically if it is weak. Business travelers can't do much to fight price increases, but even before the recent round, some were trying. **Du Pont**, which spends about $100 million a year on domestic air fares, is increasing the number of video conferences among staffers who used to fly to meet with one another. In 30 months this has saved Du Pont $5 million in travel expenses.

– William E. Sheeline

HONESTY TESTS FOR NEW EMPLOYEES

■ Sure, George Washington quickly owned up to cutting down the cherry tree, but he wasn't asking his father for a job. Hence the more than

WHAT'S HOT	WHAT'S NOT
Teal-green ties; purple *anything*, period	**Red ties (no yellow ones, either)**
An extra six pounds	**Skinny**
Three-legged stools	**Chintz**
Oat bran *everything* (but beans are gaining)	**'21' Club**
Narcissism	**Neuroses**
Taxis	**Limos**
Portugal	**China**
The 1960s	**The 1970s**
Garter belts	**Palimony**
Calvin Klein's wife	**Calvin Klein's designs**
Dead celebrities	**Sports Heroes**
Fine wines	**Wine coolers**
Pet pigs	**Bacon**

■ Couch potatoes may well laze on through 1989, happily plugged in to their VCRs and munching their takeout food. But the true trendies will be beehivers—hyperactives who manage to live most of their hectic lives without leaving home. They raise kids, work on their computers, and work out on their exercise machines. All their discretionary spending goes to feathering their nests. Profligate spending is no longer chic. The collective inquiring mind of the trend-conscious Washington hostess, meanwhile, is dying for data on Barbara Bush. Above all else, which designer will she favor—or is the Aunt Tillie look going to be it? One thing's sure: She isn't about to dye her hair, and gray will be in. Says Barbara Feigin, executive vice president of Grey (no relation) Advertising: "Age is the rage, youth's uncouth."

WHY IS AIRLINE FOOD SO TERRIBLE?

Surprise! *You* are partly to blame—along with airline managers who labor under the illusion they are in the transportation business when they're not.

■ *by Monci Jo Williams*

AN AXIOM of the food service business holds that a chef can hide anything under a sauce. As any veteran flier knows, the chefs who devise those airline meals not only can—but often do. Lurking beneath that glutinous gravy is meat (origin unknown); gray, ancient-looking peas; a few sad, spindly grains of rice. And don't forget the inevitable hockey-puck hard rolls suitable for use as a blunt instrument.

What is this stuff masquerading on your plate as food? Why, for Pete's sake, didn't you leave your tray table in its upright position? And why, oh why, is airline food so *bad*?

You may never get an answer to the first two questions, but here are a couple of reasons for the third. Believe it or not, fliers, *you* really don't care. That's what the airlines say you have told them. The other reason is related to the first: Airlines see no competitive advantage in offering you more sumptuous fare.

In a 1984 survey by the International Airline Passengers Association, a consumer group of 100,000 frequent fliers, travelers ranked the quality of food and drink no higher than 11th on a list of 14 consumer concerns, far behind convenient schedules and low ticket prices. FORTUNE's own marketing survey of more than 700 subscribers this year confirms that food is a low priority for fliers (see table). If you don't let the food influence your purchasing decision, as the marketers say, why should the airlines improve the food?

At its worst, airline food does meet the minimum standard for edibleness—you do eat it, don't you? According to a recent survey conducted for the Inflight Food Service Association, the industry group for the people who furnish the meals, most fliers believe the food has maintained its quality or improved in the nine years since deregulation. Last year U.S. airlines spent $1.6 billion, or 3.5% of operating expenses, to feed passengers on flights originating in the United States. In 1978 the amount was $726 million, or 3.4% of operating expenses.

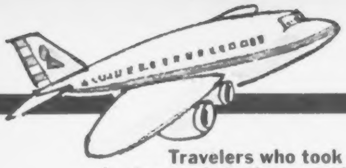
Executives at many airlines and in-flight food service companies refused to be interviewed, one of them explaining that a recent episode of food poisoning on a Northwest Airlines flight made the subject particularly sensitive. But a few chefs and food service managers cited the survey data ranking food low in priority as evidence that the meals they serve don't need improvement.

Not so, says Michael Marchant, president of the Inflight Food Service Association and vice president of Ogden Allied Food Services, which caters to international carriers. Marchant believes the airlines are misreading the surveys. He says that once a passenger is strapped into an airline seat and trapped for an hour or more, "his first few priorities—getting to his destination and getting there at a reasonable price—are being satisfied. Now, for as long as he is on that plane, the passenger wants service, and good food is part of that."

This brings us to the second reason for airline food's mediocrity: management. Some airline executives labor under the misapprehension they are in the transportation business, when their real business is providing service. They are not simply carting cattle from one

ILLUSTRATIONS BY DANA FRADON

WHAT'S MOST IMPORTANT TO AIRLINE PASSENGERS



	Travelers who took a business trip in the past 12 months					
	Frequent (10+ trips)		Moderate (3–9 trips)		Light (1–2 trips)	
	%	Rank	%	Rank	%	Rank
Convenient schedules	95%	1	93%	1	88%	2
Flies to places I generally go	89%	2	92%	2	89%	1
Fast check-in and boarding	84%	3	79%	7	82%	6
Comfortable seating	83%	4	81%	6	81%	8
Preassigned seats	83%	4	77%	9	71%	12
Good on-time performance	82%	6	87%	3	83%	5
Good safety record	80%	7	85%	4	85%	3
Friendly/efficient personnel	77%	8	82%	5	84%	4
Efficient reservations	73%	9	79%	7	82%	6
Good in-flight service	72%	10	69%	11	74%	10
Efficient baggage handling	66%	11	77%	9	81%	8
Caters to business fliers	62%	12	50%	13	42%	13
Frequent-flier program	61%	13	42%	14	19%	15
Low or discount fares	56%	14	60%	12	73%	11
Good food and beverage service	41%	15	39%	15	40%	14

place to another; they are in the business of providing a satisfying experience, with all that this entails in terms of comfort, convenience, and, let's hope, that certain *je ne sais quoi.* Yet if the truth be known, the carriers would rather not feed the customers at all. Says an executive at a major airline: "It's one of those things that if the other guy didn't do it nobody would."

PLANES, which are essentially narrow metal tubes, are not ideal venues for restaurants. The environment can be downright inhospitable for food, not to mention people. About half the cabin's air comes in through the superhot engines, which suck out all moisture before the air is cooled for use in the plane. That's what makes for those hockey-puck dinner rolls and, incidentally, for contact lenses that dry out and adhere to your eyeballs.

Because the galley is too small to hold more than a little refrigerator and a couple of convection ovens, there isn't room for chefs, sous chefs, and sauciers to run around stirring the pot. Food is prepared on the ground hours ahead of time, usually by Marriott, Sky Chefs, and the other service outfits, but occasionally by the airlines themselves (United has its own kitchens in 15 cities). That mysterious meat and those itty-bitty peas are partly cooked, cooled, and crammed into those undersize oblong casseroles that the trade calls "dog dishes." (No wonder the food looks so unhappy.) The dog dishes are frozen, then covered with aluminum foil, loaded onto a cart, and stored until it is time to wheel them out to your plane, where they are unloaded and reloaded in the galley. About 15 minutes before mealtime, they are reheated and unloaded onto another cart for cabin attendants to roll up and down the aisles against the streams of passengers on their way to and from the head.

Yessir, it's tough dishing it out at 30,000 feet. But some international carriers—among them Swissair, Lufthansa, and Singapore Airlines—do a terrific job. That's partly because they can afford to spend more to feed you. They operate longer, more profitable flights than domestic lines do, and some are subsidized by their governments. Though Swissair is not subsidized, it considers itself an ambassador of its country. Says Willy H. Sayer, manager of catering: "Many of our travelers are tourists, and the flight is their first impression of Switzerland. We want them to have a good one."

Even the best meal aboard a plane will not equal what you'd get in a top-notch restaurant. But, says Sayer, "it can come close." One current economy-class menu on an $811 flight from New York City to Geneva includes beef tenderloin, duchess potatoes, and rum cake. A first-class ticket on Swissair's Geneva flight costs $1,896, and the menu includes caviar, goose liver with fennel and raspberry sauce, roast loin of veal sliced from the cart, followed by cheese and port. The leisurely three-hour repast costs the airline an astounding $99.97 per person, not including the cost of the wine.

ON DOMESTIC flights, first and business classes are more profitable than economy, and the food is better than it is in steerage to lure top-paying passengers. Some domestic carriers have chosen to distinguish themselves by their service. For example, Midwest Express, a small airline headquartered in Milwaukee and owned by Kimberly-Clark, the paper producer, runs flights that average about two hours and charges full fares with very few discounts. Flight attendants actually bake chocolate chip cookies on the plane, and the odor wafts through the cabin. Says John Farrer, manager of dining services: "We want to show the airline cares."

The major U.S. carriers spent an average of $4.21 per meal per passenger during the third quarter of 1987, the last period for which figures are available, but Midwest spends $9. Dinner consists of a salmon tartar appetizer, braised grouse, and a charlotte russe for desert—washed down with suitable and complimentary French wines.

It seems obvious that food will never be the priority with airline travelers that safety, on-time arrivals and departures, and convenient flights are. Moreover, it is not clear that passengers would pay more for their tickets to get better food. But Midwest Express flights to such well-served cities as Boston, Dallas, and New York are frequently sold out, and Swissair's North Atlantic business is growing 7% a year. Airline executives who are slow to figure out that service sells may find themselves in for a nasty competitive surprise—nastier, even, than the one waiting for you in your dog dish. F

REPORTER ASSOCIATE *Charles A. Riley II*

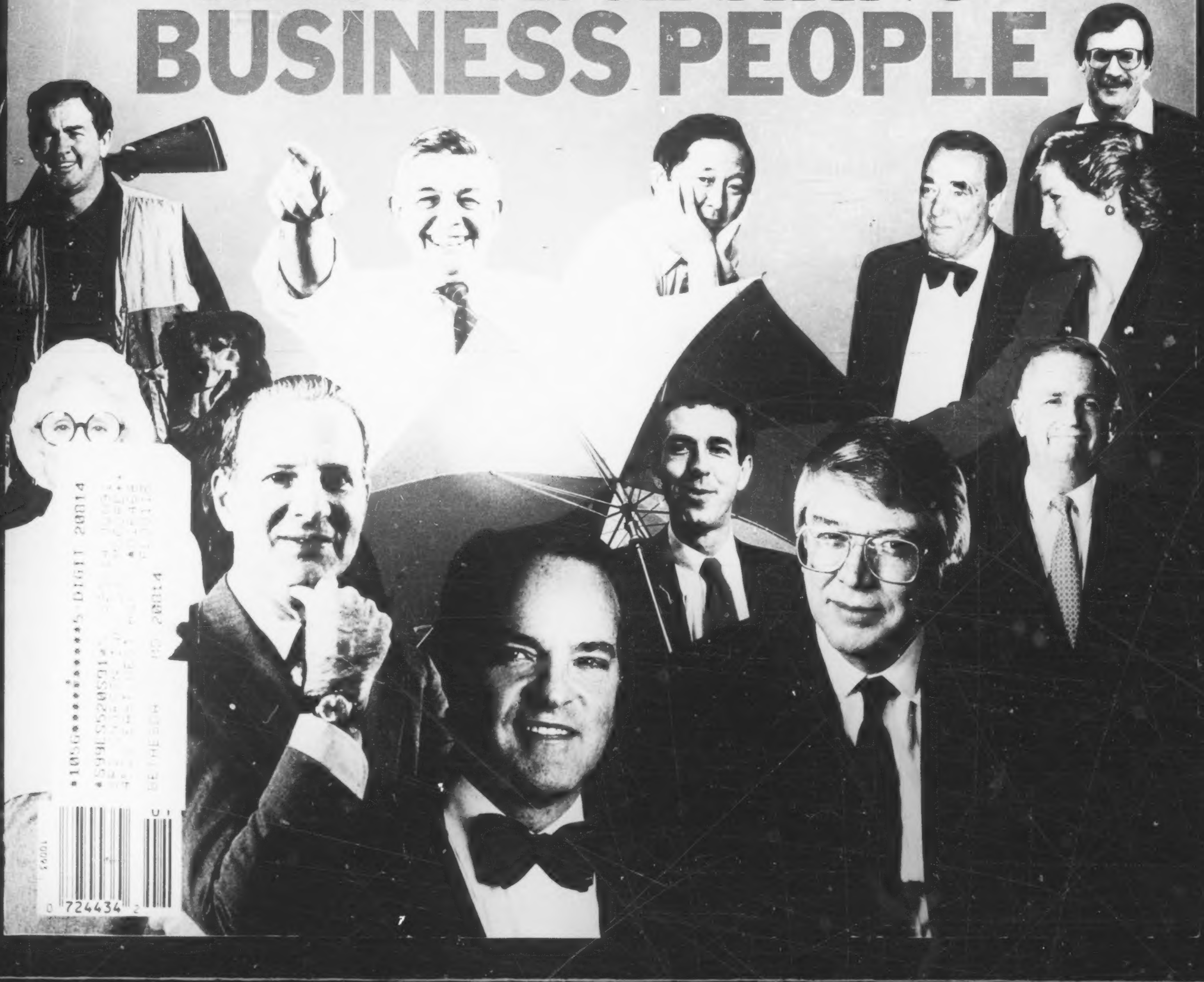
■ ***EXCLUSIVE:*** **HENRY KRAVIS AND ROSS JOHNSON ON LBOs, RJR, AND GREED** ■

JANUARY 2, 1989

3.50

FORTUNE

THE YEAR'S 25 MOST FASCINATING BUSINESS PEOPLE



*1056********5 DIGIT 20814
BETHESDA MD 20814
0 724434 2

JANUARY 2, 1989

FORTUNE

JEROME MAGID
ROB KINMONTH
CHARLIE ARCHAMBAULT —PICTURE GROUP
STEVEN PUMPHREY

SPECIAL REPORT/Cover Stories

THE 25 MOST FASCINATING BUSINESS PEOPLE OF 1988 32
Remarkable in all sorts of ways, the men—and one woman—on this list are above all bold, willing to take risks—to go ahead and pull the trigger on the deals of their lives. One is dead. At least one is a criminal. Many have transformed industries—even whole economies.

ROSS JOHNSON and HENRY KRAVIS became the biggest bidders in the wildest auction. 34

TOM STEPHENS, a self-described redneck from Arkansas, brought Manville out of purgatory. 36

BOBBY STEWART, drought doctor, works to keep America's farmers from being burned. 37

DALE HANSON gets plenty of bang for his bucks managing California's biggest pension fund. 37

BERNARD ARNAULT has bet the château that nothing makes money like deluxe brands. 40

JOSEPH ANTONINI, the Lee Iacocca of retailing, dresses up down-at-the-heels K mart. 41

JACQUES DELORS, who calls himself "the most exotic politician in France," is leading Europe to 1992. 41

FRANCES LEAR used a $112 million divorce settlement to become a new magazine's mercurial midwife. 42

HAMISH MAXWELL is shrewdly moving Philip Morris from tobacco to soup to nuts. 43

MICHAEL BOSKIN, a cat lover from Stanford, will mastermind the U.S. economy for President Bush. 46

ABEL AGANBEGYAN, the economic thinker behind Mikhail Gorbachev, is a committed optimist. 47

STEVEN EINHORN, Wall Street's top strategist, may also be the Street's top bear. 47

ROBERT BASS displays his Texas billions tastefully and does his deals quietly. 50

MICHAEL OVITZ, Hollywood Shogun, stars with the likes of Paul Newman and Robert Redford. 50

ROBERT MAXWELL, a powerhouse British press lord, lays siege to the U.S. 52

MICHAEL SMITH, America's chief trade negotiator, tells Japan just where the beef is. 53

JAMES BAKER has managerial muscle, political aptitude, and close ties to an old friend in the White House. 54

ALAN BOND, Australia's grand acquisitor with "the attention span of a gnat," flits his way to a fortune. 54

SEIJI TSUTSUMI, a onetime student radical in Japan, created a retailing revolution. 58

CLIFFORD NOE, a.k.a. Dr. Noe, the convicted swindler, says he was just using junk bonds. 59

BILL MARRIOTT JR., a first-rate, second-generation CEO, knows cleanliness is next to godliness. 62

JOHN NEFF, Windsor Fund's hugely successful portfolio manager, is a devoted discount shopper. 62

HUGH McCOLL crossed the frontier into Texas and became a super-regional bank pioneer. 63

ADAM SMITH may have been dead for two centuries, but he's still a living hero to consumers. 63

COVER PHOTOGRAPHS:
Top row, left to right: Tom Stephens by Jay Dickman—Matrix; Hugh McColl by Benno Friedman; Seiji Tsutsumi by Caroline Parsons; Robert Maxwell with Princess Diana—Alpha; Michael Boskin by John Harding. Bottom row: Frances Lear by Michael Halsband; James Baker by Robert Trippett—Sipa; Henry Kravis by Andy Freeberg; Steven Einhorn by John Abbott; Ross Johnson by Harry Benson; Bill Marriott Jr. by David Strick—Onyx.

VOL. 119, NO. 1

"I brought a costume so that when he visits Steve Jobs in California, he can wear the right thing."

PAGE 10

"You can accurately be described as an international swindler on the highest level."

PAGE 59

"Once, only a few hours before we won, we wanted to call the whole thing off."

PAGE 69

"If we had any nefarious plan in mind, if we were greedy, we were pretty dumb about it."

PAGE 72

"I would push a button to go back to the old phone system if I could."

PAGE 82

"This guy reeked of leadership."

PAGE 89

MONEY & MARKETS

LBOs: GREED, GOOD BUSINESS—OR BOTH? 66

The outcry reflects way too much hysteria and far too little understanding. Here's how to think about buyouts. *by John Paul Newport Jr.*

'GREED REALLY TURNS ME OFF' 69

Henry Kravis tells how he won RJR Nabisco and why Washington should leave LBOs alone.

'THEY CLEANED OUR CLOCK' 72

Ross Johnson describes how charges of greed were shrewdly shifted from Wall Street to him.

WHERE ALL THE MONEY COMES FROM 75

Cash for deals is flying in from everywhere. The corporate borrowing binge does not seem risky—at least not yet. *by Vivian Brownstein*

SERVICES

WAS BREAKING UP AT&T A GOOD IDEA? 82

On balance, yes. Five years later, the industry is thriving. *by Kenneth Labich*

MANAGING

THE NEW POWER IN BLACK & DECKER 89

CEO Nolan Archibald and his whiz kids are making Japan take notice. *by John Huey*

TECHNOLOGY

500,000 PAGES ON ONE ERASABLE DISK 99

Optical platters can do wonders for computer memory. *by Mark Alpert*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 10

OPEC's cheaters, more turbulence at Texaco, still going with the wind at Tara, unbundled stocks, Pampers in the men's room, Ross Perot in costume, and more.

FORTUNE FORECAST 19

Attacking the budget and trade deficits now will bring years of prosperity, says a noted international economics expert. Doing nothing will invite stagflation—or worse. *by C. Fred Bergsten*

PERSONAL INVESTING 25

Good buys in bad times for interest-sensitive shares. *by Joshua Mendes*

Also: What to do if you own stock in a takeover target, hidden values for 1989, and Portfolio Talk with Ted Rosenberg.

COMPANIES TO WATCH 96

Great Lakes Chemical Corp., Dyansen Corp., Medstat Systems Inc., and Regis Corp. *by Julianne Slovak*

LETTERS TO FORTUNE 104

OFFICE HOURS 107

Portable phones and fax machines make staying in touch easier than ever. For an executive, this isn't always a good thing. *by Walter Kiechel III*

KEEPING UP 111

An abundance of poverty, windy moments in Washington, New York's smart boys, and other matters. *by Daniel Seligman*

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Ray Cave
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, John J. Curran, Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (Menlo Park, California), Ronald Henkoff, David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Bill Saporito, Lenore Schiff, Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John Huey, John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J.B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Alan Farnham, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Stephen Madden, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo)
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Todd James
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Karen Andrews, Charles J. Attardi, Leslie Brenner, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, George J. Habit, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Maureen Mallon Cluen (director), Guy Gleysteen (assistant manager)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Haire
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

LISA BOGDAN

Leinster, Brownstein, Newport, and Saporito fuel up for their task at breakfast.

NO RECENT business battle has attracted as much attention as the gladiatorial clash for ownership of RJR Nabisco between the two gentlemen pictured in the foreground on this issue's cover. Now that leveraged-buyout kingpin Henry Kravis of KKR has won the bout and $25 billion of spoils, what more can be said about LBOs? Turn to our Money & Markets section (page 66) and you will find that the answer is *plenty.*

JODI BUREN

Alan Farnham

Writer John Paul Newport Jr. leads off the section by answering the hard questions. Are LBOs good or bad for shareholders, employees, customers, and America's competitive strength? Will the huge pile of debt cascade into a wrenching series of bankruptcies when the next recession hits? Associate economist Vivian Brownstein wraps up the section with a forward-looking examination of where all the cash for financing the buyouts is coming from—and how long it will last.

Between these bookends you will find the most vivid and intimate accounts of the struggle for RJR Nabisco yet to be told. They come directly from the principals involved, in their own words. Winner Kravis told his story to Colin Leinster; loser Ross Johnson confided at length to Bill Saporito. Their tales capture the excitement, emotional ache, and physical pain of the fight—Kravis lost eight pounds and more than a few nights' sleep, Johnson lost his naiveté about Wall Street and finally his company.

Kravis and Johnson head our list of the year's 25 most fascinating business people. In the special report beginning on page 32, you will find a complete album of the rich, the righteous, and the roguish. Reporter Alan Farnham, author of six of the profiles, interviewed an imprisoned master swindler and a dapper FORTUNE 500 CEO in the same day. Any similarities? Notes Farnham: "They shared a love of free enterprise."

Credit the handsome look of the report to associate art director Renee Klein, who designed the layouts, and photo researcher Todd James, who collected pictures and cajoled subjects into posing. Observes Geoffrey Colvin, editor of the package: "These people are symbols of major change in business worldwide, but in our special report we insist on seeing them first as human beings—and that is fascinating."

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by Time Inc. Time Inc. principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. N. J. Nicholas Jr., President; Kevin D. Senie, Treasurer; Philip R. Lochner Jr., Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, FL 33630-0604.

© 1988 Time Inc. All rights reserved. FORTUNE is a registered mark of Time Inc.

LBOs GREED, GOOD BUSINESS —OR BOTH?

The outcry over these deals reflects way too much hysteria and far too little understanding. Herewith an interim report attempting to correct that imbalance. ■ *by John Paul Newport Jr.*

YES, there is some reason to be concerned about the pace and size of leveraged buyouts. The trend toward leverage, not only in LBOs but also in takeovers and on the balance sheets of ordinary companies, is big and growing. Says Charles Schultze, former chairman of the Council of Economic Advisers: "The numbers are beginning to be macroeconomically significant." And these highly leveraged companies have yet to be tested by recession. But there is no cause for panic. Much of the alarm triggered by the RJR Nabisco spectacle stems from an instinctive, unexamined fear of debt.

The RJR deal could be just one stop on an ever-increasing upward spiral, or it could be a high-water mark. Either way it invites an assessment of LBOs in general. For some companies they work almost like magic. But too many LBOs—at too high a price—could end up distorting the economy. The question is whether the efficiencies gained will be greater than the possible problems. Since the LBO era is far from being over, this has to be an interim report. On the following pages, Henry Kravis and Ross Johnson tell their own stories from opposite sides of the fight for the biggest buyout ever. A final article examines why so much money is available for these deals, and whether it will continue to be.

Many of the criticisms of LBOs suffer from a singular disregard for what might be called double-entry bookkeeping analysis. This holds that for every seemingly negative financial effect, one can usually find a countervailing positive effect, and vice versa. Nowhere is this clearer than in examining why the kind of breathtaking leverage that typically accompanies an LBO can be the best thing that ever happened to a company. This is not true for every company, certainly. But it is often true for companies with strong cash flow and mature businesses—like tobacco—that do not require large capital expenditures or extensive research and development to remain profitable.

RISKS AND REWARDS OF LBOS

1. **Shareholders in leveraged deals score big.** Competing buyout groups are boosting premiums.
2. **Existing bondholders get the shaft.** Bond prices can plummet in the face of new debt.
3. **Profit margins rise after most LBOs.** Managers become owners and are more careful not to squander corporate resources.
4. **Recession could trigger LBO defaults.** But even bankrupt companies keep on producing.
5. **Deals reflect the tax code's debt bias.** If equity were treated more equitably, market forces should keep a cap on leverage.

Simply stated, by putting management under enormous pressure to meet outsize interest payments every quarter, a highly leveraged capital structure can improve a company's productivity dramatically. Michael Jensen, a professor at the Harvard business school, argues that without such pressure, managers often waste money. Says he: "You have corporations throwing off huge amounts of cash that they plunge back into slow-growth businesses with diminishing rates of return, or spend on ineffective mergers and acquisitions." If, however, the shareholders got some of this wherewithal, perhaps through an LBO, they could earn a higher return by investing somewhere else.

Typically, in an LBO managers have a greater equity stake in the new private company. This further motivates them to improve earnings. Though more managers of public companies have incentive pay packages these days, they are still compensated mainly with salary and the psychic rewards of running private empires. This mind-set hardly inspires them to sell off divisions or cut staff, even if doing so would boost the price of the company's shares.

Another advantage to the LBO structure is the deductibility of interest on the debt assumed. By this means, companies that have gone through an LBO can often eliminate taxes for several years. By contrast,

REPORTER ASSOCIATES *Mark Alpert and Alan Deutschman*

dividends are taxed twice, both as corporate earnings and as income to shareholders. "LBOs are one of the most productive things to hit the economy in a long time," exults Jensen. A number of academic studies support his claim unambiguously. One found that the operating profit margins of LBO companies were 40% higher than their industries' medians two years after the buyout.

A CRITICISM frequently heard in the course of the RJR Nabisco saga was that LBOs enable management to steal a company from shareholders by paying too little when it takes the company private. But an increasingly competitive market for corporate control makes that all but impossible. If management puts the company in play, the likelihood is greater than ever that other bids will ensue. Directors have become steadily more aggressive about soliciting such bids. Ross Johnson's initial offer for RJR Nabisco was topped within four days.

Of course, if you are a double-entry thinker, you would expect LBOs to have negative side-effects, and you would not be disappointed. In the drive to cut expenses, employees are sometimes laid off. Still, people get fired even when ownership doesn't change hands, as companies restructure to become more productive. It is hard to argue that society at large loses out in the process.

In most buyouts the businesses sold off wind up in the hands of corporate parents that are better able to wring value out of them. A study by Steven Kaplan of the University of Chicago found that post-LBO employment at 33 buyout companies stayed about the same as before the deals. Those worrisome cuts in research and development? Companies that require lots of R&D—high-tech outfits, say—don't attract a lot of buyout bids.

Another frequent complaint is that LBOs hurt existing bondholders, and this seems to be true, particularly in some of the most recent deals. The sudden transformation of a corporation with little borrowing into a highly leveraged outfit makes payments on the existing debt less certain. The average price of RJR Nabisco's $5 billion of investment grade bonds fell 20% immediately after Johnson's buyout bid was announced. Significant but less dramatic declines in bond prices were recorded after buyout announcements at other companies, such as American Standard.

A number of angry bondholders sued RJR Nabisco for restitution after the announcement of management's buyout plan, including Metropolitan Life, which held $340 million of RJR bonds. But even after such unpleasantness, the bond market does not seem to be significantly discounting investment grade debt, even that issued by companies rumored to be buyout candidates. Issuers worried about the possibility can incorporate in their new offerings covenants and "poison puts" that require the company to make good on bonds suddenly devalued by buyouts or other changes in corporate structure.

FAR AND AWAY the biggest potential problem associated with LBOs is the limited flexibility with which management can maneuver in the event of recession, possibly leading to default and bankruptcy. These fears are serious, but often exaggerated. For one thing, when the debt in question provides high, equitylike returns, bondholders are more inclined to exhibit equitylike forbearance, and not press for default as readily as with traditional, lower-paying debt. Says Ronald M. Freeman, a managing director at Salomon Brothers: "People tend to see equity as a warm, fuzzy pillow and debt as a knife in the back. But if you're paying me an extra three percentage points for the high-yield debt, I'm willing to be understanding if you

HOW SOME PAST LBOs PLAYED OUT

COMPANY (Dealmaker)	PRICE (millions) Date	PREMIUM*	ASSETS SOLD (millions)		SALES† (millions)	PROFIT (LOSS)† (millions)	INTEREST† (millions)	EMPLOYEES
BORG-WARNER (Merrill Lynch)	$4,410 7/87	16%	$3,623	Pre-LBO	$3,379	$206	$53	82,600
				Most recent	$2,185	$448	$216	72,800
ALLIED STORES (Robert Campeau)	$3,583 12/86	36%	$2,200	Pre-LBO	$4,226	($53)	$153	61,800
				Most recent	$3,303	$3	$354	27,000
R.H. MACY (Management)	$3,518 7/86	55%	NONE	Pre-LBO	$4,653	$206	$98	55,000
				Most recent	$5,729	($188)	$570	70,000
BEATRICE (KKR)	$6,183 4/86	45%	$7,000	Pre-LBO	$11,396	$232	$300	100,000
				Most recent	$4,178	$931	$376	17,000
STORER COMM. (KKR)	$1,953 12/85	31%	$1,696	Pre-LBO	$592	($23)	$89	4,800
				Most recent	$480	$1	$221	2,925

*Difference between final offer to shareholders and stock price one month before first offer. †For last full year before LBO, and for most recent four quarters.

Leveraged buyouts are like snowflakes: Each is different. Since its buyout, Macy issued more debt and bought some new stores. It loses money. The other companies all shrank by selling off assets and then used the proceeds to reduce debt. Despite having to pay a lot more interest than before, these companies posted higher earnings, largely because they were able to achieve productivity gains.

get into trouble and I think you have a chance to pull through. We can negotiate new terms, maybe defer payments until the slump is over. I'm not doing it gratuitously, but because of the extra interest."

Even if some companies go bankrupt, the effect on the economy may not be as bad as is often supposed. Says Securities and Exchange Commissioner Joseph Grundfest: "Bankrupt LBOs are not firebombed. Their productive capacity does not disappear from the economy. They continue to do business, often with operating profits, as their capital structures are renegotiated." In the case of Revco, a drugstore chain and the largest LBO to go bankrupt so far, not one store was closed or one employee fired as a result.

To many critics, bank lending for LBOs represents the real time bomb. A recent Federal Reserve survey found that LBO loans accounted for 9.9% of all commercial loans at large banks. That's less than half big banks' exposure in Third World countries, but many top officials still find the amount troublesome. In October, Federal Reserve Chairman Alan Greenspan cautioned banks to watch their LBO lending more closely, and the Comptroller of the Currency is planning to examine banks' LBO exposure in early 1989. That may prompt banks to think twice before getting into many more of these deals.

Spurred by disgust at the RJR Nabisco shootout, a lot of people in Washington are offering other solutions even before they have a firm grasp on the problems. An example: the proposal to eliminate the tax deductibility of interest on corporate debt. That presumably would discourage LBOs by making them more expensive. It would also get rid of what the critics see as a big loss of tax revenue. But it would make debt more expensive for young, growing companies that really need it. It would give acquisitive foreign investors an advantage since they would still have the deduction back home. Also, as FORTUNE reported (December 5), the tax losses from interest deductions may well be exceeded by revenues from capital gains and other taxes paid in connection with LBOs.

REPRESENTATIVE Edward Markey of Massachusetts, chairman of the House finance subcommittee, is talking about legislation that would distinguish between "productive debt" and "nonproductive debt." This seems a classic bad idea that would put the government in the role of deciding how much companies should borrow and why.

A more sensible approach would be to find a revenue-neutral way to eliminate the double taxation of dividends. Says Alan J. Auerbach, chairman of the economics department at the University of Pennsylvania: "There's a role for debt and a role for equity, but there's no reason that the tax system should discriminate against either one."

Apart from tax changes, control of the growth of debt is better left to the market. This is not without its perils. There is a huge pool of pension assets looking for a home and more than $20 billion in committed money waiting to do LBOs. Given the stock market doldrums, LBOs and leveraged takeovers are the only game in town. And LBO firms earn big fees for managing deals whether they pan out or not. Still, some market forces making for moderation are already at work. Competition is reducing rewards. New provisions on bond issues make buyouts more expensive. As the risks and rewards for leveraged buyouts become better known, lenders and investors may well exert more caution out of concern for their own position. In the end, the best antidote to excessive greed may be enlightened self-interest. ■

PENSION FUND MANAGERS GET QUEASY

BRUCE FORSTER

Meeker: no heartburn yet in Oregon

Although only about 5% of public employees' pension funds invest in LBOs, even such meager participation among traditionally cautious investors points up the sweep of the LBO revolution. Already, however, there is talk that the revolution may have gone too far, that all that money chasing too few deals is heightening the risk. Michigan's state treasurer, Robert Bowman, who invested some of his fund's money with Kohlberg Kravis Roberts, is particularly miffed at the RJR Nabisco buyout because he considers it a hostile takeover. He says he had an understanding with KKR that the firm would avoid such deals. "Obviously we can't get our money back from KKR," says Bowman, "but we're now one deal wiser."

Marshall Burkes, executive director of the Wisconsin Investment Board, says his trustees pulled back from new LBO deals as early as the end of last year. Michael R. Cook of Buck Pension Fund Services Inc., which advises the large New York State Teachers' Retirement System, warned clients last September that "the party is over."

Not everyone agrees. In Oregon they're not putting away the funny hats and noisemakers just yet. Like a majority of state pension funds, Oregon's operates under the "prudent-person rule," which requires that it act as any prudent businessman might in similar circumstances. Interpreting the rule broadly, the Oregon Public Employees' Retirement System in 1981 became the first state pension fund to invest in an LBO. It put $25 million into California-based Norris Industries and tripled its money in three years. Says state treasurer Tony Meeker about the anxiety over RJR Nabisco: "It's sort of like saying the day after the crash, 'We'd better get out of the stock market.'"

Meeker is prepared to keep Oregon's money where his mouth is. The state has put an unusually large portion of its $8.5 billion in pension money into LBO funds—7.5%, vs. the 2% to 5% that other funds typically invest. And it's all with KKR, though Meeker achieves some diversification by investing in several KKR funds. Says he: "If we were to start over, we would be looking for the best LBO funds, and that would lead us right back to KKR." Oregon's annual returns of 50% to 60% on the money may explain his enthusiasm. **– Rahul Jacob**

WHERE ALL THE MONEY COMES FROM

Cash for deals is flying in from everywhere—savings, pension funds, home equity, overseas lenders. The corporate borrowing binge does not seem too risky—yet. ■ *by Vivian Brownstein*

MERGERS. LBOs. Takeovers. Never have so many borrowed so much from so many. Where is it coming from, the famous "sea of liquidity"? Will corporations drown themselves in it—or, alternatively, might the money suddenly dry up?

Quick answers: It comes from everywhere, it introduces new but not necessarily lethal risks, and corporations are likely to keep on carrying more debt than they have in the past.

Ask any normally loquacious economist about the source of all this money and he is apt to splutter like a parent whose child asks, "Where do we come from?" His reply may be something akin to "We're from Detroit." The first problem is that liquidity means many different things. Take an exit poll at any neighborhood bank and most who reply are likely to say that their pocket cash and checkbook balance represent their liquid assets. More sophisticated folks might include money market funds and government securities, since these can be easily turned into cash. A FORTUNE 500 CEO would include his company's holdings of commercial paper as well. What these people are trying to figure is the amount of money they have to spend.

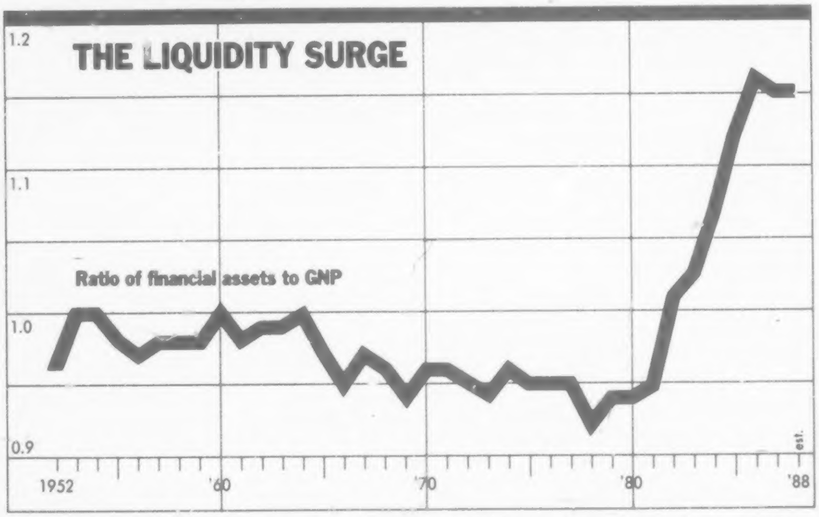
But look from a different angle. What we also see is a pool of *lendable* money. Thought of this way, potential liquidity is virtually unlimited. Says First Boston economist Albert Wojnilower: "In a world of floating interest rates, money is guaranteed to be available at the prevailing short-term interest rate." Liquidity, he notes, is really

Unfettered interest rates have encouraged Americans to pour their money into the marketplace. Foreign investors are joining them, shipping back dollars by the boatload.

ILLUSTRATION BY JOO CHUNG

the willingness to lend combined with the willingness of central banks to maintain an interest rate that is not perceived as prohibitive. In a manner of speaking, all the money in the world is available if the price is right.

To put today's liquidity in context, look at the funds domestic investors put into credit markets in relation to GNP. As the chart below shows, lending has exploded. For every dollar of GNP, investors today are willing to hold nearly $1.15 worth of bonds, money market funds, CDs, and other financial assets—compared with between $.92 and $1.00 before. As a result, financial assets held by the public have increased more than $2 trillion in the past six years. By contrast, the cumulative decline in corporate funds from net new stock issues has amounted to less than $500 billion.


THE LIQUIDITY SURGE

Americans are putting more money than ever into lendable assets, such as money market funds and bonds. Investors now ante up $1.15 of such funds for every dollar of GNP.

WHY HAVE Americans become so willing to lend so much? There are many answers. The 1980s stock surge certainly helped. The value of shares held by the public is almost double what it was in 1982, despite the decline in net new issues and the October 1987 crash. With their portfolios appreciating, investors freed up other money to lend.

Consumers are turning equity into debt too. Years of inflation pumped up the value of most homes. Until recently the gains were academic except for homeowners who planned to move. Now people are converting those gains into spendable or lendable funds by taking out home equity loans. Apparently they would rather do that than give up the income from their money market funds, which has helped push interest earnings to 14% of total personal income, vs. less than 10% during the 1970s. Tax reform has also provided an incentive because it is eliminating the deductibility of interest payments on other types of loans.

Thus, monetary deregulation has uncaged an important source of new liquidity—and one that is likely to last. Says economist Stephen Taylor, former head of the Federal Reserve Board's flow of funds section: "You don't have to be a sophisticated investor to get the market rate of interest these days, and savers will keep searching for the high interest they became used to seven or eight years ago."

Money is also pouring in from abroad. Investment capital is roaming the world, looking for the dynamic economy that is also safe. Foreigners still hold only a small percent of debt outstanding in the U.S. But in the first half of 1988 they supplied 21% of all the funds lent to domestic borrowers, compared with just 4% in the late 1970s (see charts, page 80).

That's counting only the money we know about. Official statistics do not catch all the money borrowed from abroad. Lending through U.S. offices of foreign banks is recorded in U.S. banking statistics. But, says economist John Wilson, who succeeded Taylor at the Federal Reserve, loans arranged directly with the head office of a foreign bank may not get captured in the accounts. Similarly, if a domestic bank sells part of a loan to an overseas bank, the loan can disappear from U.S. balance sheets.

Though the accounting methods aren't comparable enough to be precise, International Monetary Fund statistics suggest that foreigners could be lending *twice* as much in the U.S. as balance-of-payments data show. Foreign banks appear to be the major contributors to many LBO financing packages (suggesting that they do not foresee large dollar declines to come). Says one source close to several large Japanese banks: "They all want to lend more."

That could change, of course. Foreigners may not want to keep on putting their money into bigger and costlier leveraged-buyout deals. But they will continue to invest in U.S. business one way or another. The newly industrialized countries offer a higher return, but too many controls and problems for the old money of rich European investors. The Japanese have more dollars than other parts of the world can absorb. *Voilà*, the U.S. it is. And as long as the U.S. is running a large current account deficit, the Japanese and other foreigners will be adding to their pile of dollars.

PENSION FUNDS provide a major pipeline to the liquidity pool, and their contribution has grown in recent years. What's more, their role is even bigger than their share of the total would suggest. Pensions, money market funds, bond funds, and the like not only add to the total amount of liquidity but also concentrate it. Professional managers, presiding over more than half the money flowing from U.S. private investors, have much more influence on the financial climate than individual investors.

Altogether, U.S. nonbank financial institutions hold more than $6 trillion of assets. Public and private pension funds alone hold over $1.5 trillion. The money is usually invested conservatively, only 5% or so in high-risk, high-reward situations such as an LBO or venture capital fund. But that small share of institutions' money provides an important part of the financing available to firms putting together LBO deals. True, some pension fund managers are beginning to shy away from LBOs. But like consumers, they have got hooked on those handsome yields. If LBOs truly pale, they'll be looking for the

REPORTER ASSOCIATE *Rahul Jacob*

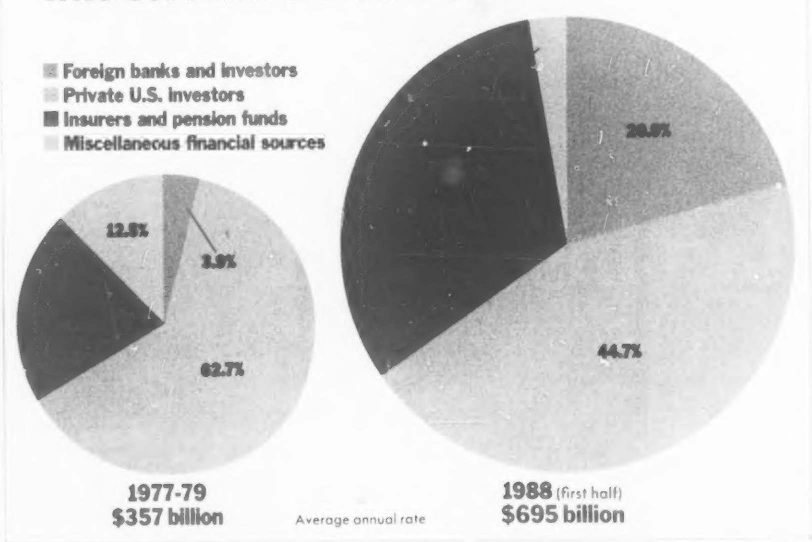
next high-risk, high-reward investment.

Banks, like pension funds, help mobilize money for mergers. They lend, they arrange consortiums of lenders, and they sell loans to other bank and nonbank lenders. No one knows for sure how big a role they play, including the Federal Reserve Board or the Comptroller of the Currency. But there are hints. A Fed survey earlier this year suggested that 15% of commercial and industrial loans were related to mergers, and at some large banks the figure rose to 40%. Those aren't such startling numbers, considering that banks have been pushed out of the markets for working capital loans, replaced by their former customers who lend to one another via commercial paper.

THE NEW BUSINESS is so rewarding that banks are not likely to abandon it as long as the money is in demand. When making loans for leveraged buyouts, they earn twice the normal spread over the London Interbank Offered Rate. So reports Christopher L. Snyder Jr., president of Loan Pricing Corp., a financial data firm. What's more, the up-front fees banks got from these deals over the past three months have on average been at least five times as much as they collect on standard working capital loans.

But given these temptingly high rewards, can bankers be trusted to make prudent loans? Worries about the great liquidity sea generally start with the risk to the banking system. The most pointed warning came when Federal Reserve Chairman Alan Greenspan cautioned banks to be sure their LBO loans are sound. Until recently banks have held only so-called senior debt—debt with the first claim on a company's assets if it goes belly up. Lately, though, some have started to take subordinated debt called "mezzanine" financing, which is more profitable but less secure. The large banks are not the only ones jumping into dangerous water. "The real risk is that the small institutions may have taken on too much debt relative to their size," says Goldman Sachs bank analyst Robert Albertson.

Still, it would probably take a deep and long recession to put the banking system in trouble. Recently the big banks have begun to shy away from selling LBO loans to smaller ones that haven't examined the risks carefully enough. "None of the lead banks want an LDC situation again," says Snyder, referring to the Third World loans that got many into trouble. Often overlooked, too, is that LBO loan customers are not a business category but a diverse portfolio. Some are cyclical, but others—particularly the most recent ones—are concentrated in sectors such as food where cash flows are more stable. "The only common factor is the high degree of leverage," says Wells Fargo CEO Carl E. Reichardt.


WHO SUPPLIED ALL THAT CASH?

Pension funds, insurance companies, and foreign investors together supply more than half the money loaned in U.S. capital markets, nearly twice what they contributed a decade ago.

If the lenders aren't so vulnerable, what about the borrowers? The buyout of RJR Nabisco could put corporations over the top as the largest single group now tapping the U.S. credit market, bigger even than households. Nonfinancial corporations' share of total debt, which had hovered around 20% over the past decade, began shooting up earlier this year. Corporations absorbed 30% of all the lendable funds made available during the second quarter. Given the big LBOs pending, the figure for the last quarter could reach 40% of net new lending.

SO FAR, THE TOTAL corporate debt load does not seem menacing. Harvard economist Benjamin Friedman, for example, thinks that most of the debt taken on will not present any problems so long as earnings are continuing to grow. But watch out if the economy hits hard times, especially if the pace of leveraged buyouts continues for the next few years. Ben S. Bernanke and John Y. Campbell of Princeton studied 1,400 large corporations and concluded that up to 10% could go bankrupt in a very severe recession. Bernanke emphasizes the "very," but adds that even if they do not go bankrupt, the leveraged companies will make a recession worse. With large interest payments to meet, they are likely to be particularly aggressive in cutting other costs, such as payrolls.

The debt burden could also lead to higher inflation. Says Friedman: "The leveraging of the corporate sector has changed the risks that policymakers must consider when they decide whether or not to step in and try to stop inflation." At the moment, the Fed does not seem constrained—Greenspan has been letting the market push interest rates up. But Friedman questions whether the Fed would be willing to continue the good fight to the bitter end if it judged that many companies would be unable to stand a sharp drop in earnings.

Rather than provoking a financial debacle, the recent excessive phase of the buyout binge will probably just fade away. But with or without the specific device of the LBO, the restructuring of corporate America will continue. Companies will need capital, and investors searching for high returns will keep feeding the sea of liquidity. For good or bad, the world of decontrolled lending seems destined to produce more debt than before. ■

WAS BREAKING UP AT&T A GOOD IDEA?

The answer, on balance, is yes. Five years after divestiture, many customers enjoy lower costs and more choices, the industry thrives, and the technology has advanced. ■ *by Kenneth Labich*

YES **Robert E. Allen, AT&T's chief executive, leads a leaner company that has gradually learned to compete but hasn't forgotten how to maintain standards.**

CRITICS WERE nearly apoplectic when the Justice Department, citing antitrust laws, moved to break up the phone company. The laments echoed across America: Why mess with a telecommunications system that is the envy of the world?

As the fifth anniversary of the AT&T divestiture rolls around on January 1, that carping seems, in retrospect, ill-considered. Today the great majority of the country's telephone customers, large and small, declare themselves satisfied with the service they receive. Despite predictions that AT&T would pummel its fledgling competitors, the industry has evolved into an entrepreneurial, freewheeling marketplace where customers and many shareholders reap big rewards (see table).

Most important, the new competition has forced rapid technological change, in fact, a flowering of communications research. Says William McGowan, chairman of fast-growing MCI Communications: "Divestiture was essential. If we had not done this, the U.S. would now be at a competitive disadvantage with the world."

WHO WON AND WHO LOST?

The breakup's blessings have not been bestowed with absolute uniformity. The divestiture order allocated more expensive long-distance service—which had traditionally subsidized cheaper local service—to AT&T. At the same time the order put local customers in the hands of seven regional holding companies, the Baby Bells. This separation was expected to lower long-distance rates and raise local fees, and that is what has happened (see chart).

What about customers who seldom use long distance? They include many of the 90 million residential subscribers and the 18 million small businesses. These folks are paying, on average, nearly 35% more for their local phone service than five years ago.

But the rise has not been as steep as many had feared. The more pessimistic critics were predicting that local rates would double in a few years and that many poor and elderly would be forced to give up their phones because of the higher cost. The Federal Communications Commission reports that phone service has expanded since divestiture. About 93% of U.S. households have phones, up from 91% in 1983, and the percentage is even higher for the over-65 age group.

Judge Harold H. Greene of the U.S. district court in Washington, D.C., approved the consent decree between AT&T and the Justice Department, and as part of that agreement he has the job of administering it (see box). Though some critics, especially the Baby Bells, think he is too diligent in his

REPORTER ASSOCIATE *Kate Ballen*

NO **Wallace Aron, a consultant who had a recent telephone problem at his Portola Valley, California, home: "I'm more confused than I was. I never know who I'm dealing with."**

task, only an act of Congress could turn it over to someone else. Responding to criticism about increased costs, Greene likes to recall in speeches that local phone rates had been going up at about a 6% annual rate before the breakup and that most of the big price rises are over. He also points out that residential subscribers and small businesses may well benefit from lower equipment costs. Before divestiture, most consumers leased phones, paying an annual rental fee of about $28 each. Now a cheapie model goes for less than half that, and even the top-of-the-line equipment costs little more than twice the old yearly rental charge.

For customers who use long distance a lot, of course, the picture is even rosier. Some corporations have sliced their communications costs more than 50%. Even with the big increases in local rates, overall phone service is only about 16% more than in 1983. Adjusted for inflation, the real cost for all phone service in the U.S. is a bit less than five years ago. Says Randall L. Tobias, vice chairman of AT&T: "If you stand back and look at the total picture, you are hard pressed to find anyone who has been substantially hurt by divestiture."

WHAT ABOUT SERVICE?

Here again the pessimists were wrong. True, some residential subscribers and small businesses who loved their rotary dials may believe the new telephone features are not worth the higher rates. They may also face the increased hassle of dealing with several companies when they pay their bills or have a service problem. When a line goes dead, these customers don't know whether to call the local company or the store that sold the phone. If the problem turns out to be that cute Bulgarian-made phone they picked up on sale, the one that quacks like a duck and doubles as a microwave oven, they could get hit with a service charge.

YES By being able to negotiate with several different suppliers, says John DiChiara, director of information services at PepsiCo, "we've benefited up and down the line."

But the telephone system itself functions at least as well as in the past, and such technological advances as digital lines and fiber optics have improved service for many customers. Moreover, for many telephone users, divestiture has brought an extraordinary range of service options. AT&T used to offer barely half a dozen extra services, such as Touch-Tone phones and computer modem lines. Now the big long-distance carriers can provide over 100 options to customers—everything from exotic conference hookups to international data transmission. Major corporations are now able to tailor their communications networks to specific needs, knowing they can count on suppliers eager to compete for their business.

In a 1986 Gallup poll of diverse customers done for the U.S. Telephone Association, 84% of respondents rated post-divestiture service as either good or excellent. Another poll, conducted the same year by AT&T with the Consumer Federation of America and the American Association of Retired Persons, suggests that residential customers have adapted more quickly than expected to changes. More than 90% said they knew they had choices for long-distance service, 80% said they knew whom to call for problems with local service, 74% said they knew whom to call for equipment repair, and 68% said they found it easy to understand their bills.

Corporate and government customers are equally pleased. A study last year by a Massachusetts research group tracked subscribers, each with an average of nearly 1,000 communications lines. Over 80% rated their service good or excellent, while less than 3% responded with a "poor." Says William T. Esrey, president of long-distance carrier US Sprint: "For big business customers, the bottom line is that intense competition works. They are getting better service at significantly lower prices."

WHAT HATH COMPETITION WROUGHT?

At divestiture, critics were convinced that industry competition, intense or not, would be short-lived. They argued that AT&T, allowed to stay in lucrative long-distance and equipment manufacturing businesses, had plucked the plums and would easily dominate any competitors in those fields. Many Wall Street analysts were dubious about prospects for the seven regional holding companies. The Babies, it was widely speculated, would have trouble making a profit without Ma Bell's management and technological nurturing.

NO "I'd push a button and go back to the old system if I could," says Bonnie T. Widenhouse, president of a small real estate firm in Charlotte, North Carolina.

Record another "incorrect" for the doomsayers. The equipment business is populated by a gaggle of vendors from around the globe, aggressive marketers such as West Germany's Siemens and Canada's Northern Telecom. Hundreds of competitors have found safe niches in the long-distance market, and two of them, MCI and US Sprint, have become multibillion-dollar enterprises with the financial and marketing muscle to match up with AT&T. The Baby Bells, meanwhile, have generally topped Mom in crucial financial benchmarks such as total return. Ten shares of AT&T were worth about $615 at divestiture; the shareholder who hung on to those ten shares, plus the seven Baby Bell shares thrown in with them as part of the breakup, is now holding stock worth about $1,300.

In fact, compared with some younger, nimbler players, AT&T has at times seemed more than a little clumsy. Weighted down with employees and unaccustomed to the thrust and parry of the open marketplace, the company reported disappointing earnings in the first several post-divestiture years. AT&T demonstrated its marketing naiveté when it made a ballyhooed entry into the personal computer business. The company assigned its old-line sales force, used to dealing with captive customers, to handle unfamiliar high-tech products and grapple with entrenched competitors. The result: losses of around $3 billion.

A modest turnaround began in 1986, as late Chief Executive James E. Olson slashed costs. Olson's successor, Robert E. Allen, 53, has maintained the momentum and instilled a more combative spirit in the once somnolent giant. Since 1984, AT&T has cut over $1 billion through employee reductions and plant modernization. Allen has tightened the focus of his sales force by creating strategic business units for specific customer groups; for example, manufacturers. The company, in December, won 60% of a multibillion-dollar contract to replace the federal government's telecommunications network. Even the computer division, still a money loser, got a big lift recently when it won a contract with the U.S. Air Force worth over $1 billion.

MCI's McGowan has built a $5 billion giant since divestiture.

AT&T will take a $6.7 billion write-down in the fourth quarter of 1988, mainly to replace aging equipment. Though the move will produce the first annual loss in the company's 103-year history, most industry experts applaud Allen's continuing restructuring efforts. Says John F. Malone, president of the Eastern Management Group, a consulting firm: "AT&T has had to step up to the plate on some very disagreeable issues, and it has become a lot more business-like and aggressive as a result."

What most concerns AT&T executives is hanging on to their share of the long-distance business, the company's lifeblood. "I hope everybody here comes to work scared to death," says vice chairman Tobias. The company still controls about 80% of the market, but its fears are justified. First, competitors are making steady inroads. Second, the regional companies are asking Judge Greene for permission to get into the business.

MCI, with about 10% of the long-distance market, has become the most formidable opponent. Its revenues have galloped at a 27% average pace since divestiture, vs. less than 1% for AT&T, and most Wall Street analysts are optimistic about its prospects. MCI chief Bill McGowan, 60, doubts that he can continue to post such phenomenal gains indefinitely. But he does like the earnings outlook as his company enters arenas previously dominated by AT&T, particularly international long distance. Says he: "There is no safe harbor left for AT&T. We can do everything they do."

US Sprint, a partnership between GTE and United Telecommunications, has also emerged as a strong long-distance contender. The company, soon to be controlled by United Telecom, has yet to report a profit, but its $3 billion fiber-optic network is in place, and its revenues for 1988 should be up an awesome 35%. Its long-distance share is about 7%.

WHAT DO BABY BELLS WANT?

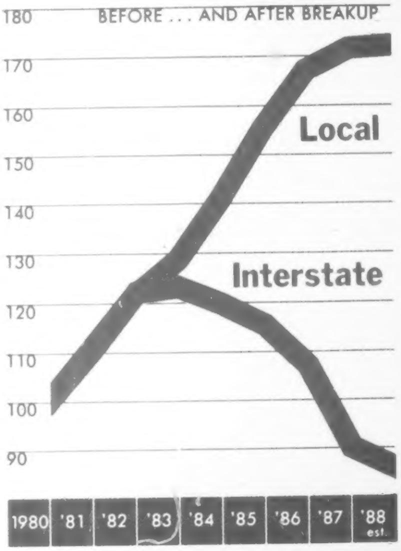
The seven regional companies continue to press for more freedom, particularly the right to be able to start their own information services, such as electronic yellow pages, in an effort to build on the considerable success they have had since divestiture.

Like little princes, the Bells started life with obvious advantages. They inherited an average of $17 billion in assets and effective monopolies for local service in their areas. But the Babies have prospered beyond expectations by cutting costs, reducing debt, maintaining top-notch service, increasing earnings, lobbying vigorously and often effectively for more operating latitude, and even venturing into such unregulated start-up businesses as computer retailing. Says BellSouth Chief Executive John Clendenin: "All the sinister things, like fears about poor service and our finances going bad, have dropped by the wayside."

Each of the offspring has grown at its own speed. Some, such as BellSouth, were blessed with booming populations in their regions, while others, like U.S. West, have been stunted by the costs of maintaining service throughout big-sky country. California, where Pacific Telesis is located, has

THE UPS AND DOWNS OF TELEPHONE RATES

Index: 1980 = 100



been a bastion of pro-consumer commissioners who have been tough on rates.

All the Baby Bells are in the top ten on FORTUNE's annual list of largest utilities, and all have performed well for their shareholders. Says John Malone of the Eastern Management Group: "At divestiture investors were barraged with advice on which Baby Bell to buy. It turns out you couldn't have made a bad play."

HOW ABOUT NATIONAL SECURITY?

Before the breakup Pentagon officials argued that national security could be compromised in an emergency because they would not be able to use a single communications system to spread the alarm. Scientists grumbled that AT&T might cut funding or radically shift priorities at Bell Labs, long one of the world's premier research facilities. Experts differed with Judge Greene's assumption that more competition would spur advances in communications technology. In short, critics grossly overstated the harmful effects of divestiture on America's interests.

Defense Department concerns were handled at the outset. During the years of hearings before the breakup, the brass had argued that a more fragmented phone system could spell disaster in case of a natural catastrophe or armed attack. "We had the Bell System at our beck and call," recalls Lieutenant General William Hilsman, former manager of the National Communications System, the agency that oversees emergency preparedness. "It took us two years to figure out what we would do if we couldn't call AT&T."

STEVE WOIT—PICTURE GROUP

Esrey has put fiber-optic cable (shown) throughout US Sprint.

The consent decree's answer was to order the Baby Bells to have a single point of contact. They set up an organization called Bellcore, which would function both as a research and engineering consortium and as a control center in the event of a national emergency. A National Sercurity Emergency Preparedness group within Bellcore makes sure the regionals can respond to everything from hurricanes to thermonuclear war. Some dozen Bellcore managers concern themselves solely with security issues, and a contact person also resides at each of the regional companies. Bellcore has already proved its mettle in weather emergencies like hurricanes and tornadoes.

MA BELL, HER COMPETITORS, AND HER OFFSPRING

	REVENUES $ millions compound growth 1984-88	PROFITS $ millions compound growth 1984-88	TOTAL RETURN* 1984-12/5/88
LONG-DISTANCE CARRIERS			
American Telephone & Telegraph	**$34,233** 0.8%	**−$1,700** N.A.	**16.3%**
MCI Communications	**$5,146** 27.3%	**$315** 52.0%	**11.0%**
US Sprint	**$3,479** 17.7%	**−$173** N.A.	**N.A.**
REGIONAL COMPANIES			
American Information Technologies	**$9,928** 4.4%	**$1,206** 5.0%	**25.4%**
Bell Atlantic	**$10,379** 6.4%	**$1,315** 7.8%	**24.7%**
BellSouth	**$12,976** 7.7%	**$1,667** 7.3%	**24.8%**
Nynex	**$12,713** 7.5%	**$1,296** 7.1%	**24.5%**
Pacific Telesis Group	**$9,486** 4.9%	**$1,207** 9.9%	**25.3%**
Southwestern Bell	**$8,463** 4.2%	**$1,065** 4.8%	**24.8%**
U.S. West	**$8,893** 5.1%	**$1,025** 3.7%	**24.0%**

*Price appreciation and reinvested dividends. Estimates: Goldman Sachs

Some federal employees still yearn for the good old days. Says National Communications System deputy manager Ben Morriss: "When companies are in competition with each other and trying to keep their costs down, they won't do certain things just for national security purposes. For example, each company installs less backup power for an emergency because it is more expensive."

But outsiders argue that divestiture has injected some fiscal reality into the process. Says Kenneth Flamm, a senior fellow at the Brookings Institution: "Now the Defense Department has to pay for what it wants, and that probably has the effect of making it get only what it really needs."

Hardly anyone predicted the breakup's one clear negative impact on the national interest. The U.S. has become a huge open market for the global peddlers of telecommunications equipment, especially business telephones and other hardware. At the same time, many overseas markets are largely closed to U.S. products because of trade barriers or local monopolies. A $275 million trade surplus in telecommunications gear in 1982 had turned into a $2.5 billion gap by last year.

continued

WHAT ABOUT R&D?

Most fears about Bell Labs have turned out to be illusory. Despite the fact that AT&T's revenues have shrunk to about 50% of predivestiture levels, the company has pumped up its R&D budget from about $2 billion annually at the breakup to about $2.7 billion in 1988. To make sure that the institution that gave the world such inventions as transistors and laser beams remains at the leading edge, AT&T continues to devote about 10% of the Labs' budget to basic research projects with no immediate commercial applications. Bell Labs, which has received over 25,000 patents since it was founded in 1925, still wins on average a new one each day.

Far more important for telephone users, competitive pressures are turning the concepts developed in the laboratory into products faster than before. About 30% faster, according to Ian Ross, president of Bell Labs. He says, "If you walk around the lab, there is a greater sense of urgency about implementing technology."

Divestiture has clearly accelerated the pace of some crucial new communications developments. One major example: fiber optics, which provide more capacity and clearer transmissions. AT&T had made long-range plans to put in digital lines, which include fiber optics. When MCI and US Sprint forged ahead with their own fiber networks, AT&T hustled to catch up, and by 1992 will have laid fiber throughout 94% of its system.

The Baby Bells are still prohibited from manufacturing their own hardware under Judge Greene's order, but they can develop computer software through Bellcore. They are also largely liberated from AT&T's technological monopoly; they can buy from anyone, anywhere. Says Michael Kennedy, a telecommunications consultant at Arthur D. Little: "You used to get a new service when AT&T was good and ready for it. The Bells had to queue up to get their new technology, like a bread line in Moscow."

THE JUDGE WHO RULES THE PHONE INDUSTRY

KATHERINE LAMBERT

"Divestiture has been very successful."

No man wields more power over *any* industry than Judge Harold H. Greene of the U.S. district court in Washington, D.C. He transformed the telecommunications business by approving the breakup of AT&T and now oversees the post-divestiture rules. Says William Baxter, chief prosecutor of the antitrust case: "Under another judge the entire industry might be very different today." Critics ask why a single person should hold such sway. Interviewed by FORTUNE's Kate Ballen, Judge Greene, 65, answers his detractors—and offers some personal insights:

Are you surprised that you are still so involved in the telephone system?

Yes. I thought once the decree was entered, there might be a little bit of controversy here and there, requests for this and that, but not on the constant basis there has been. Since the breakup I've probably received over 1,000 briefs because all the phone companies are constantly filing requests for enforcement and interpretation.

Is divestiture a success?

The main purpose of the decree was to bring competition into the telecommunications industry by way of reduced rates and more innovation, yet to keep the quality of the network at least as high as it was before. The divestiture has been very successful on all these fronts. In my opinion the most significant consequence has been the increase in innovations. It has been said that if GE had acted in the last 40 years as AT&T did, the American consumer would have the most durable light bulb in the world but no dryers and dishwashers.

Will you ever allow the regional companies into long distance, manufacturing, and information services?

The decree says that the restrictions should be lifted only when the regionals cannot use their monopolistic power to impede competition in markets they want to enter. That day has not yet arrived. Unless, of course, you assume the addition of a wolf to a flock of sheep would maximize competition in the flock.

Coming from Bell Labs: 3-D fax

The Justice Department, the regionals, and the Federal Communications Commission would like to give all control of the industry back to the FCC. How would you feel about this?

When outside forces come along and say we want to do what is the court's business, I obviously don't think that's a good idea. The decree was drafted by AT&T and Justice. I approved it, and the Supreme Court upheld my decision. This was a legitimate lawsuit. I've made it clear that any interested party can file on my decisions. Obviously the expectations of those people who want to transfer the power to the FCC or elsewhere figure that they would eliminate the restrictions or not enforce what I would.

Which company did you choose as your long-distance carrier?

I deliberately did not pick a long-distance carrier because I felt my choice could be used commercially in advertising. I waited for a carrier to be assigned—and it happened to be AT&T.

WHAT HAPPENS NEXT?

AT&T is pushing for a major change in the FCC rules that govern its long-distance business. Now the company is limited to a maximum rate of return of 12.2% on investment. To please shareholders it wants the freedom to boost earnings as much as possible. Its competitors, MCI and US Sprint, have no such earnings restrictions, but the Baby Bells do. Their limits are set by the FCC and the states in which they operate. However, half the states are considering or have already put in changes. Many states are contemplating a cap on phone call charges instead of earnings. The FCC may soon do the same.

Questioning the level of the playing field, AT&T also complains about regulations that bar it, and not its competitors, from negotiating prices with big corporate customers unless the FCC approves. Meanwhile, the Bells want permission to get into growth areas outside their present purview—such as manufacturing equipment, providing long distance, and generating information services such as electronic yellow pages and various data banks. Says Nynex Chief Executive Delbert Staley: "If you think you can restrict us to being phone companies, then you are condemning us to death."

But restraint may be the most prudent course for now. The price cap on call charges that AT&T is looking for seems a good idea; any business should have the right to earn its best possible return. But AT&T, with its huge market share, could still destroy its competitors by consistently undercutting their bids on big corporate accounts. The FCC should take another look at that situation when AT&T's competitors are a lot stronger. As for the Baby Bells, they could easily use their monopoly on local services to make a shambles of competition in such fields as long distance and information services. The Bells make a case for manufacturing: There is so much competition that it seems unfair to exclude them. But the FCC would have to make sure the manufacturing Bells do not use their dominance in an area to exclude other makers.

Yes, Judge Greene and the Justice Department have been right and their critics wrong. But there could yet be big trouble on the line if changes come too fast and extend too far. The regulators were correct when they plunged ahead with divestiture five years ago. Now they would be wise to heed the maxim they chose to ignore back then: If it ain't broke, don't fix it. F

We need someone with the ambition of an investment banker, the patience of a driving instructor and the optimism of a weatherman.

We have a unique opportunity for someone special.

A chance to spend two years in another country. To live and work in another culture. To learn a new language and acquire new skills.

The person we're looking for might be a farmer, a forester, or a retired nurse. Or maybe a teacher, a mechanic, or a recent college graduate.

We need someone to join over 5,000 people already working in 60 developing countries around the world. To help people live better lives.

We need someone special. And we ask a lot. But only because so much is needed. If this sounds interesting to you, maybe you're the person we're looking for. A Peace Corps volunteer.

Find out. Call us at **1-800-424-8580, Ext. 93.**

Peace Corps.

The toughest job you'll ever love.

C39000-1
1/16/89

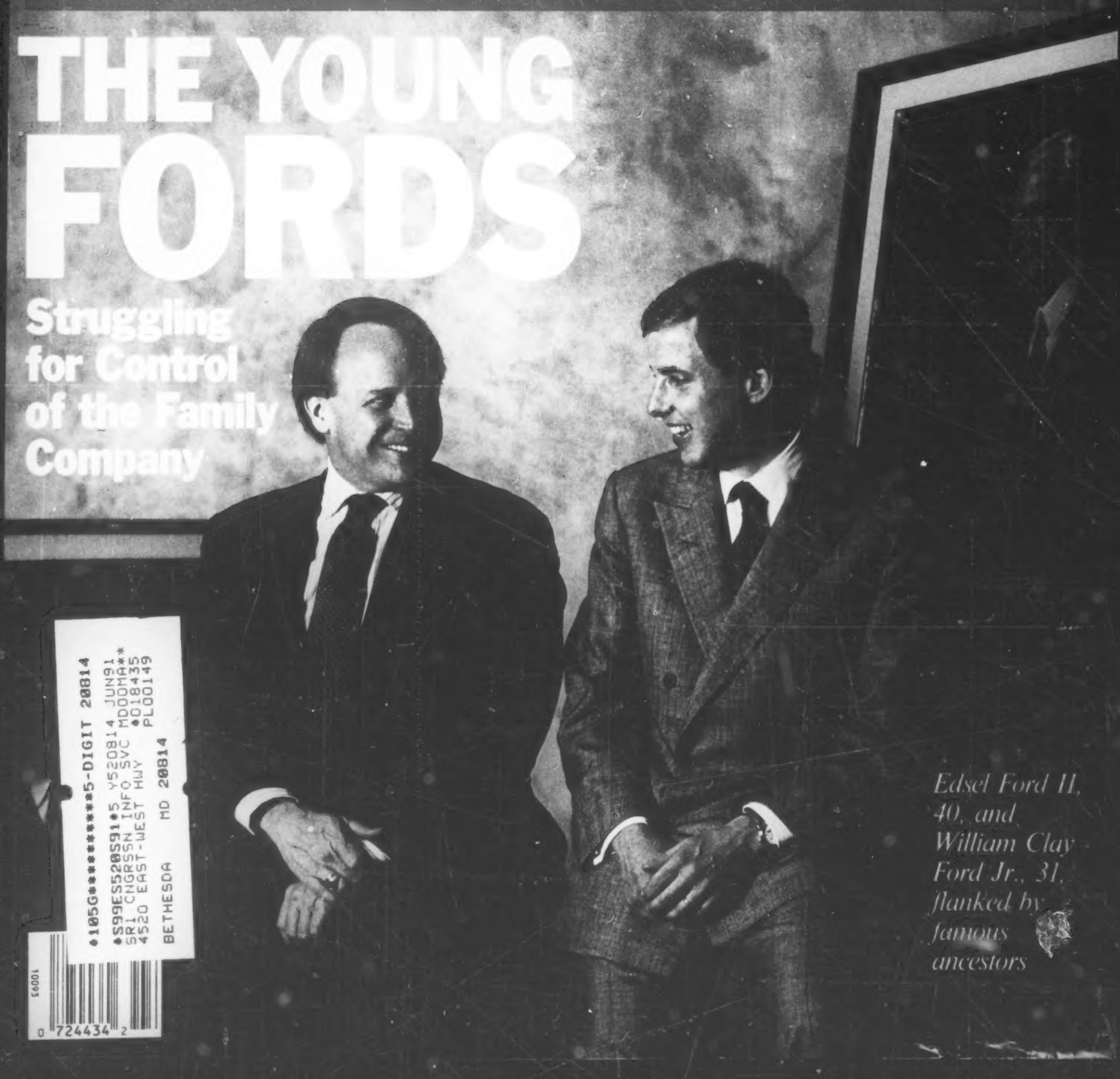
■ AGENDA FOR PRESIDENT BUSH • TEXACO • 18-MONTH ECONOMIC FORECAST ■

JANUARY 16, 1989

FORTUNE

THE YOUNG FORDS

Struggling for Control of the Family Company



Edsel Ford II, 40, and William Clay Ford Jr., 31, flanked by famous ancestors

*105G**********5-DIGIT 20814
*S99ES520S91*5 Y520814 JUN91
SRI CNGRSSN INFO SVC MD00MA**
4520 EAST-WEST HWY *018435
PL00149
BETHESDA MD 20814
10093
0 724434 2

JANUARY 16, 1989

FORTUNE

Edsel: "It seems odd that there are three classes of directors: inside, outside, and Billy and me."
COVER STORY/PAGE 36

COVER AND ABOVE: George Lange photographed Edsel B. Ford II (left) and William Clay Ford Jr. at Ford's headquarters.

DYNASTIES/Cover Story

FORDS FOR THE FUTURE 36

The family, with 40% of the shareholder votes, has effective control of the third-largest U.S. industrial corporation. The great-grandsons of Henry Ford—Edsel II and William Clay Jr.—want to run the company. But CEO Donald Petersen has real doubts. *by Alex Taylor III*

EVEN THE FORDS FEUD OVER MONEY 48

THE ECONOMY/18-Month Forecast

A PERILOUS WALK ON THE MILD SIDE 52

FORTUNE's economists see a year and a half of slow expansion ahead, but if you think that means a dull time, think again. Leisurely progress on the trade deficit will jangle nerves in the financial markets. Business will wrestle with workers over pay increases. And inflation will provide white-knuckle thrills as it climbs toward levels not seen in years. *by Todd May Jr.*

WINNERS FOR SLOW TIMES 60

A look at 15 industries: This year won't be as good as last for most, but profits will keep rolling in for many—especially exporters.

CORPORATE PERFORMANCE

WHO'S IN CHARGE AT TEXACO NOW? 68

A sturdy Annapolis graduate and a canny corporate politician, Chief Executive James Kinnear would like to be the boss. So would brusque, impatient raider Carl Icahn of TWA, who is accumulating Texaco shares again and threatening to mount a new attack. The unending struggle between managers and shareholders is forcing strategic compromises and setting the big oil company adrift. *by Stratford P. Sherman*

NESTLÉ SHOWS HOW TO GOBBLE MARKETS 74

Under Chief Executive Helmut Maucher, an extroverted German who wears saddle shoes and a tie emblazoned with the company insignia, the world's No. 1 food company wrote the book on global expansion. Key lessons: Always think long term, adapt products to countries and cultures, and expect to lose plenty of money while building market share. *by Shawn Tully*

VOL. 119, NO. 2

"The market is distinctly overvalued and stocks should underperform bonds over the next five years."

PAGE 25

"Daddy never liked to talk about business at home. If we asked a question, we got a two-second answer."

PAGE 36

Kinnear is presiding over a near revolution at logy old Texaco—not always willingly.

PAGE 68

MONIQUE JACOT

"We need the single-mindedness of people who think about chocolate 24 hours a day."

PAGE 74

"Americans are ready to do what has to be done; all they want is leadership."

PAGE 82

"People are still driving an awful lot in Europe and Japan despite high gas taxes."

PAGE 95

POLITICS & POLICY

AN AGENDA FOR PRESIDENT BUSH 82

The first priority is to *gradually* bring the budget into balance. That can be done with a combination of spending cuts and, sorry to say, tax increases totaling $100 billion by 1994. The new President should also rethink policies important to business, including education, the environment, housing, the financial markets, and trade.

A FORTUNE PROPOSAL FOR BALANCING THE BUDGET 92

CEO POLL

BOSSES TO BUSH: RAISE TAXES NOW 95

Smokers, drinkers, and drivers should pay more, say executives in the latest FORTUNE 500/CNN Moneyline survey. *by David Kirkpatrick*

THE WORLD

HOW TO MAKE POOR COUNTRIES RICH 101

An ebullient Peruvian economist named Hernando de Soto wants the underground economy legalized. He argues that all those entrepreneurs working off the books in Third World countries are doing so solely because they are stymied by bureaucracy. *by Jeremy Main*

SERVICES

HOW CARNIVAL STACKS THE DECKS 108

The biggest cruise operator got that way by making the ships themselves—not the stops—the destination. Its floating resorts swamp the masses with service. *by Faye Rice*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 8

NEWS/TRENDS 10

The wider import of Drexel's guilty plea, aid for Armenia from U.S. corporations, supermarkets vs. suppliers, truffle water, and more.

PERSONAL INVESTING 25

Why capital goods stocks look good for 1989—and beyond. *by Andrew Evan Serwer*

Also: Retailer Melville, interest rates, and Portfolio Talk with Thomas White of Chicago Group.

COMPANIES TO WATCH 80

J.M. Smucker, Toll Brothers, Toddler University, and Intellicall. *by Julianne Slovak*

FORTUNE PEOPLE 117

Silicon Valley dreamer John Sculley, serving two masters, have a heart, Donald Kelly's new deal, and the bad rap. *by Stephen Madden*

ON THE RISE 120

BOOKS & IDEAS 123

Mark Reutter tells the saga of Bethlehem Steel's operation at Sparrows Point. *by Bill Saporito*

LETTERS TO FORTUNE 127

OTHER VOICES 131

Why big-name department stores are losing out to discounters. *by Stanley J. Winkelman*

KEEPING UP 135

Southpaw in the White House, jailbird odds, and other matters. *by Daniel Seligman*

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Ray Cave
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, John J. Curran, Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (Menlo Park, California), Ronald Henkoff, David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Bill Saporito, Lenore Schiff, Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John Huey, John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J.B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Alan Farnham, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Stephen Madden, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo)
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Todd James
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Karen Andrews, Charles J. Attardi, Leslie Brenner, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, George J. Habit, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Maureen Mallon Cluen (director), Guy Gleysteen (assistant manager)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Haire
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

LISA BOGDAN

Fraker (left), Taylor (top), and Morrow

IS THERE a Ford in Ford's future? Most stories about America's third-biggest industrial company have focused on Ford Motor's classic comeback from its slump of the early 1980s. But none have plunged into the growing activism of the Ford family, who own 40% of the voting stock, and the tension that has developed with the company's professional managers—the ones whose names are *not* on the door. On page 36, writer Alex Taylor III takes an exclusive look at what he calls "a struggle of historic proportions" over who will run Ford in the future: hired hands or one of the two great-grandsons of Henry Ford on our cover.

"The story of the young Fords is remarkable and has not been reported anywhere else," says Taylor. "It's a great human drama." Adds story editor Susan Fraker: "All CEOs have to worry about keeping their shareholders happy, but few have to deal with a family that owns 40% of the voting stock."

Taylor has been watching the Fords go by since he was a business writer for the Detroit *Free Press* ten years ago. He recalls seeing longtime chairman Henry II riding his bicycle around Grosse Pointe Farms after work. For this story he spoke for many hours with a dozen family members and in-laws, notably Edsel Ford II, 40, the heir presumptive, and his cousin, William Clay Ford Jr., 31. He also interviewed Fords who usually do not see the press, including Josephine, 65, an art collector nicknamed Dodie, and Frederic Bourke, 42, the most influential of the Ford in-laws.

Unexpected help came from John Sculley, Apple Computer's chairman, who encouraged a reluctant Kathleen DuRoss Ford, Henry II's widow, to speak to Taylor. Sculley persuaded her to talk by telling her, "FORTUNE is a highly ethical publication."

Reporter David Morrow interviewed the most unorthodox family member, Alfred Brush Ford, 38, who joined the Hare Krishna movement in 1974 and changed his name to Ambarish Das. Morrow spent days tracking him down. "It was hard finding a particular Hare Krishna in South Florida," says Morrow. "There are a lot of them." He also prepared a detailed chart of family stock holdings, maneuvering through a maze of prospectuses, proxy statements, and, of course, the Social Register. He accounted for 98% of the holdings and was relieved to discover that the remaining 2% was in family trusts.

■

On page 82, FORTUNE presents the incoming Bush Administration with an agenda for the nation. A team of 11 writers and reporters, in consultation with chief economist Todd May and his Fortune Forecast crew, tackled a range of issues, from deflating the deficit to smartening up the educational system. Says assistant managing editor Ann Morrison, who supervised the project: "We spent weeks researching alternatives and hours discussing points that we eventually boiled down to a paragraph. Our proposals will make challenging New Year's resolutions for the President-elect."

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259) Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President; Michael J. Klingensmith, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S. possessions, one year (27 issues) $47.97; Canada, one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, FL 33630-0604.
© 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company.

FORTUNE 500 / CNN MONEYLINE CEO POLL

CEOs TO BUSH: RAISE TAXES NOW

And reduce spending too, say the heads of America's largest corporations. They want the deficit cut, and they think smokers, drinkers, and drivers should help pay.

■ *by David Kirkpatrick*

THEY SUPPORTED BUSH overwhelmingly in the election, but now that he's about to become their President, America's CEOs have stern talk for him about the deficit. *Cut it*, they say. Cut spending in all sorts of places. And forget that foolish pledge about no new taxes.

The latest FORTUNE 500/CNN Moneyline CEO poll finds that a majority of corporate chiefs think taxes should be raised—and will be. They don't want to increase taxes on income or capital gains, but neither are they just trying to gore somebody else's ox. When a defense contractor wants to cut defense spending and a maker of auto products advocates a higher gas tax—and they do—that's no-fooling determination to bring the deficit down.

Q **Do you think taxes or user fees should be increased to reduce the budget deficit?**

A

Yes	**68%**
No	**31%**
Not sure	**1%**

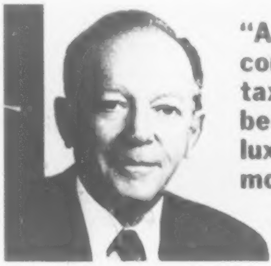
Q **Which of these changes would you favor?**

A

Raising alcohol taxes	**88%**
Raising tobacco taxes	**88%**
Raising gasoline taxes	**79%**
Taxing Social Security payments	**67%**
Ending the deductibility of interest on loans for LBOs and takeovers	**46%**
Introducing a national sales tax	**40%**
Raising personal income taxes	**16%**
Raising corporate income taxes	**8%**
Raising capital gains taxes	**3%**

The CEOs' preferred tax increases would hit smokers, drinkers, drivers, and well-off Social Security recipients. Defense spending and farm subsidies are what the chiefs would most like to cut. They state their views bluntly, sometimes passionately. Says Harry W. Todd of aerospace company Rohr Industries: "It is simply ridiculous. Instead of building our economic strength, we are raping it." Hays T. Watkins of CSX adds: "Our national economy cannot continue to withstand massive deficits. If Congress cannot or will not control expenses, the only answer is more taxes."

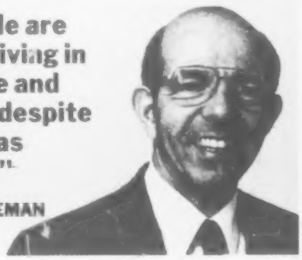
An independent opinion research firm, Clark Martire & Bartolomeo, conducted the survey from December 5 to 15. The respondents were 225 CEOs of FORTUNE 500 and Service 500 companies.



"A graduated consumption tax would be best . . . I'd tax luxury items more heavily."

VINCENT SARNI
PPG Industries

The survey found that 68% of the CEOs think tax or user fees should be raised to reduce the deficit. But several emphasize that raising revenues alone won't reduce the deficit, since they believe Congress can't be trusted with the money. Most would concur with Les Coleman of Lubrizol, a manufacturer of industrial and automotive lubricants and fuels: "I like the suggestion of taxing alcohol, tobacco, and gas, with the provision that the funds be used *only* for the deficit. Anything that goes into the general fund gets used to increase spending."



"People are still driving in Europe and Japan despite high gas taxes."

LES COLEMAN
Lubrizol

That same distrust is behind the thinking of many in the minority of CEOs who oppose any tax raise. "The irresponsible Congress will just keep spending money," argues Richard P. Wollenberg of Longview Fibre, a $650-million-a-year paper and forest products company. "They've proved that time and again."

Other opponents of tax increases cite different reasons. "American business will be more productive, make more money, and pay more taxes without a tax increase," says Robert B. O'Brien Jr. of New Jersey–based Carteret Savings Bank, stating the supply-sider's creed. William Coors of Adolph Coors thinks spending cuts alone can do the job. In particular, he says, "the budget can be balanced by making our global trading partners pay their fair share of the cost of the free world's defense."

The pro-tax crowd counters that the right taxes could do more than just help balance the budget. Jack MacAllister of U.S. West, the big regional phone company, says, "Tobacco and alcohol have added to the health care costs of our nation. It seems appropriate to tax these for needed revenue." An overwhelming 88% advocate such taxes. On the other hand, Harry G. Bubb of Pacific Mutual Life Insurance believes, "We're not going to get there by increasing

"In principle it would be great to tax these LBOs."

PETER SCOTT
Emhart

sin taxes." He proposes a 50-cents-a-gallon tax on gasoline, not only to raise revenue but also to encourage conservation.

A gas tax wins the support of 79% of the CEOs. Many like such a tax's enormous power to generate revenue—roughly $1 billion for each penny added per gallon, at least for the first few cents of extra tax. In addition, says Amos McMullian of Flowers Industries, a Georgia-based food company, "there's already machinery set up to collect taxes on gasoline. It's just a matter of increasing them, whereas with a new sales tax there would be a whole new set of forms and bureaucracy." Lubrizol Chairman Coleman notes the oddity of his supporting a gas tax, since his company makes automotive oils and fuels. "I should probably be against it," he says, "but the U.S. is the world's low-cost gasoline user. People are still driving an awful lot in Europe and Japan despite high gas taxes."

C.J. "Pete" Silas of Phillips Petroleum begs to disagree. "I'm opposed to putting the burden of balancing the budget on the petroleum companies," he says. "Our industry is already the most highly taxed in the country. People assume we'll pass this tax on to the consumer, but that doesn't always happen." Nonetheless, even Silas says he might accept an increased gas tax as part of a broader package of spending cuts and other revenue raisers.

Taxes on Social Security payments ought to be increased for some recipients, say 67% of the corporate bosses. The payments are now tax-free for individuals with adjusted gross incomes below $25,000 ($32,000 for couples). Above those levels, no more than 50% of benefits get taxed. Josh Weston of Automatic Data Processing advocates full taxation for recipients earning over $25,000 per year. John Dickson of Roundy's, a Wisconsin-based food distributor, goes further. He says, "Taxes should be levied on Social Security as on any other income."

About half the CEOs favor a revenue raiser that would also help protect them from raiders: ending the deductibility of interest on loans for takeovers and leveraged buyouts. "I've been advocating that for ten years," says Longview Fibre's Wollenberg. "We'd have a stronger business establishment if there were more reliance on equity and less on debt." Peter L. Scott of Emhart, an old-style conglomerate, shares Wollenberg's distaste for highly leveraged takeovers. "In principle it would be great to tax these LBOs, which don't add a thing to the gross national product," he says. "But I don't think such a tax would be workable."

Some CEOs favor a national consumption tax or a value-added tax of the type common in Europe, either of which would probably help boost America's anemic savings rate. Says Vincent A. Sarni of PPG Industries: "A graduated consumption tax would be best, exempting people below certain income levels. I'd tax luxury items more heavily."

When it comes to spending, these CEOs are a miserly bunch. "I don't think this is the time for increased federal spending in any area," says McMullian of Flowers Industries. His peers largely agree, although a substantial minority favor a fattened education budget. Sarni of PPG is among them: "We should increase spending for education. The future of our country is at stake. It's a crisis area, and we need to catch up."

Perhaps more surprising is that 62% of the CEOs, a heavily Republican group according to past polls, think the U.S. ought to cut defense spending. Says Carteret's O'Brien: "Gorby has given us a fabulous opportunity here, and we should seize the initiative. There's no question defense spending should be cut—but I'm worried that Senator Tower [Bush's selection for Defense Secretary] isn't the man to do it." Wollenberg of Longview Fibre suggests reducing the size of the Navy and stretching out procurement of new weapons systems. Even Lawrence O. Kitchen of Lockheed concedes, "We need a combination of reduced defense expenditures, reduced or streamlined entitlements, and increased taxes."

"American business will be more productive . . . without a tax increase."

ROBERT O'BRIE
Carteret Saving

Among the five major spending programs we asked the CEOs about, agricultural subsidies, which mushroomed under Reagan, were their least favorite by a mile. An overwhelming majority wants to cut them. Russell L. Hanlin of Sunkist Growers, a cooperative of citrus farmers who don't get subsidies, sounds a rare note of support: "As long as they exist in the rest of the world, I think our farmers need an equal level of protection."

Despite their profound worry about the budget deficit, the bosses expect a good 1989, with only 16% foreseeing recession during the year. That is a perfectly consistent outlook. As McMullian ruefully observes: "The deficit is a heck of a problem, but it's certainly giving demand a stimulus." ■

Q **Do you think a tax increase will be passed during 1989?**

A	
Yes	61%
No	37%
Not sure	2%

Q **Do you expect a recession to begin in 1989?**

A	
Yes	16%
No	82%
Not sure	2%

Q **Should federal spending be increased, decreased, or left about the same?***

A	Increased	Decreased	The same
Education	37%	7%	52%
Medicare	11%	33%	49%
Defense	2%	62%	34%
Social Security	2%	23%	68%
Agricultural subsidies	**	87%	10%

*Answers do not total 100% because some respondents had no opinion. **Less than 1%.

C8900-1
1/16/89

■ DEALS OF THE YEAR • JAPAN'S U.S. CAR PLANTS • BEST STOCKS OF '88 ■

JANUARY 30, 1989
$3.50

FORTUNE

AMERICA'S MOST ADMIRED CORPORATIONS

FORTUNE'S ANNUAL SURVEY

THE TOP TEN

Merck
Rubbermaid
3M
Philip Morris
Wal-Mart Stores
Exxon
PepsiCo
Boeing
Herman Miller
Shell Oil

How Sam Walton and His Team Are Building the Biggest Retailer

●105G●●●●●●●●●●5-DIGIT 20814
●S99ES520S91●5 Y520814 JUN91
SRI CNGRSSN INFO SVC MD00MA**
4520 EAST-WEST HWY ●D019518
PL00185
BETHESDA MD 20814
724434 2
10001

JANUARY 30, 1989

FORTUNE

Says a supplier: "They talk softly, but they have piranha hearts, and if you aren't totally prepared . . . you'll have your ass handed to you." COVER STORY/PAGE 52

ROB NELSON—PICTURE GROUP

CORPORATE REPUTATIONS
Cover Stories

WAL-MART: WILL IT TAKE OVER THE WORLD? 52

So long, Sears. Move over, K mart. Sam Walton's outback discounter is rising fast—and is No. 5 in FORTUNE's latest survey of America's most admired corporations. How did it get there? By being friendly to customers, tough with suppliers, inspirational to employees, and extremely profitable for shareholders. *by John Huey*

WHAT AILS RETAILING 61

by Susan Caminiti

AMERICA'S MOST ADMIRED CORPORATIONS 68

Results of the seventh annual survey are in: Reigning king Merck runs its winning streak to three, Rubbermaid repeats as No. 2, and PepsiCo makes its debut on the top ten list as No. 7. *by Carol Davenport*

COVER: Sam Walton, Wal-Mart chairman and founder, was photographed by Louis Psihoyos/Matrix at the company headquarters in Bentonville, Arkansas.

COMPETITION

JAPAN'S GUNG-HO U.S. CAR PLANTS 98

Jumping the oceans with the latest technology, Japanese managers are drilling their own ways into enthusiastic—but sometimes stressed-out—American workers. Here's a look inside Japan's Auto Alley, an area that cuts through six heartland states and provides 15,000 assembly jobs. Big new factories are shaking up small, sleepy communities, bringing social and fiscal strains, along with hefty paychecks *by Louis Kraar*

TECHNOLOGY

A QUANTUM LEAP IN ELECTRONICS 113

A famous and paradoxical theory of modern physics may set off a transformation as profound as the one begun 40 years ago when transistors replaced vacuum tubes. So-called quantum wells, minuscule traps that hold electrons, are the key to exciting new applications—from thin flat-panel TV screens to satellites that can communicate with submarines under water. *by Gene Bylinsky*

HOW QUANTUM THEORY WORKS IN LASERS AND TRANSISTORS 114

MONEY & MARKETS

THE BEST AND WORST STOCKS OF 1988 156

If memories of the crash drove you into hiding last year, your decision was understandable—but costly. The Dow Jones industrial average and the broader Standard & Poor's 500-stock index nearly tripled their 1987 performances with total returns of about 17%. The champion stock: Henley Manufacturing, traded over the counter, which went up 347%. *by Joshua Mendes*

VOL. 119, NO. 3

"Never buy a new issue. It pays to wait until the share price drops to a discount."

PAGE 37

"Every customer that comes within ten feet of me, I will smile . . . and greet them, so help me Sam."

PAGE 52

"If you really want teamwork and good communications, it's time consuming."

PAGE 98

"Gorbachev promised a perestroika dividend. But the check is still in the mail."

PAGE 173

"At other companies you hit 55, and bingo, you're gone."

PAGE 179

"You don't have to pay bugs a big salary."

PAGE 191

DEALS OF THE YEAR 162

After a hesitant start, merger activity—and dealmakers' fees—blazed new records in 1988. The $111.8 billion in total deals does not include the granddaddy of them all, the $25 billion leveraged buyout of RJR Nabisco by Kohlberg Kravis Roberts. That behemoth won't be wrapped up until later this year. Still, a larderful of household names, including Kraft, Bloomingdale's, *TV Guide*, Firestone, and CBS Records, changed hands. *by Ronald Henkoff*

THE WORLD

WHY RUSSIA IS STILL IN THE RED 173

Westerners seeking a big new market in the Soviet Union will have to wait. While social change is speeding ahead with the introduction of rock concerts and beauty contests as well as freer speech, Mikhail Gorbachev's economic reforms are stalled. The budget deficit is ballooning, inflation is rife, and productivity is poor. Meanwhile meat, milk, bath soap, and laundry powder are in short supply, so endless lines still define the Soviet way of life. *by Richard I. Kirkland Jr.*

MANAGING

MAKING BETTER USE OF OLDER WORKERS 179

With the ranks of younger employees thinning, smart corporations are realizing that their best recruits may be over 55. To hold on to them longer and keep them motivated, employers have started so-called phased retirement programs, offered paid sabbaticals, and even awarded new job titles with higher pay. In such companies older employees are thriving. Says one septuagenarian: "What I can do in one day these young kids can't do in a week." *by Anthony Ramirez*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 8

Executives who struck gold in 1988, five keys to corporate success, Washington's Nick and Dick show, free computers for schools, and more.

FORTUNE FORECAST 33

Higher profits lie ahead, despite a slowing economy. But to come close to 1988's estimated 9.5% increase, companies will have to fight rising interest rates and labor costs. *by Maureen F. Allyn*

PERSONAL INVESTING 37

As European trade and tariff barriers start to fall, certain stocks should rise: General Electric of Britain, Bayer of West Germany, and Aceranoix of Spain. *by Brian Dumaine*

Also: A stapler company to pin your hopes on, a tour of regional banks, and Portfolio Talk with Thomas J. Herzfeld.

COMPANIES TO WATCH 155

CML Group, Thermo Environmental, Wackenhut, and Harmon Industries.

FORTUNE PEOPLE 191

A marathoner's long-running feud, Bill Farley with Georgia on his mind, a CEO with a buggy solution to hazardous wastes, and Madison Avenue's mystery man. *by Stephen Madden*

ON THE RISE 192

LETTERS TO FORTUNE 193

KEEPING UP *by Daniel Seligman* 205

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, John J. Curran, Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (Menlo Park, California), Ronald Henkoff, David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Bill Saporito, Lenore Schiff, Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John Huey, John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Alan Farnham, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Stephen Madden, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo)
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Todd James
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Karen Andrews, Charles J. Attardi, Leslie Brenner, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, George J. Habit, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Haire
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

LISA BOGDAN (2)

Cover writer Huey: tracking down Sam

EARLY EVERY YEAR, FORTUNE publishes its eagerly awaited survey of corporate reputations, a poll of nearly 8,000 senior executives, outside directors, and financial analysts on their opinions of the largest companies in the industries they work for or follow. In all, 305 companies in 32 industry groups are rated by eight measures of reputation. Among this year's big winners: Wal-Mart Stores, the retailing empire of Arkansas billionaire Sam Walton, which led its industry by a long measure and leaped four places to fifth among the ten most admired companies.

To find out how Wal-Mart earns its reputation, FORTUNE writer John Huey had to talk his way into the press-shy company. When the top eight managers finally agreed to speak with him at headquarters in Bentonville, Arkansas, he was led into a company command post known as the Quail Room and met coolly by a tableful of men sitting with their arms crossed. Says Huey: "I told them I felt like the guy who got a date for the prom with the prettiest girl in the class, and I have five minutes to convince her what a good time she is going to have."

Huey must have been persuasive. In a first for a journalist, he was invited to sit in on the secretive weekly merchandise meeting, where he heard the top managers plot strategy.

Despite rebuffs, Huey also was determined to speak with Sam Walton. One rainy day at headquarters, Huey spotted Walton's red pickup truck in the parking lot. The chairman, an avid quail hunter, had been forced in by the rain. Says Huey, who then persuaded Walton to pose for our cover photo: "I felt that I had come face to face with one of the real titans. But he was very charming, and quick to point out he was wearing an $89 all-wool suit from Sam's Wholesale Club, a Wal-Mart chain."

Searching out explanations for the rise and fall of reputations of other companies in our survey, reporter Carol Davenport spent six months helping to gather and interpret the data and interviewing over 100 executives and analysts. Her comprehensive report, edited by John Lawrence, begins on page 68. Corporate reputations are fickle—easy to lose and tough to mend. Still, Davenport encourages those who do not rank high this year. Says she: "Most people who lose their reputations rarely have occasion to redeem themselves. Companies in the survey are more fortunate—every year they get that second chance."

Davenport and Lawrence: checking out reputations

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259) Published biweekly, with three issues in October, by The Time Inc. Magazine Company [illegible]

AMERICA'S MOST ADMIRED CORPORATIONS

Merck runs its winning streak to three, Rubbermaid repeats as No. 2, but five of this year's top ten weren't there last year. PepsiCo joins the elite for the first time. ■ *by Carol Davenport*

CORPORATE REPUTATION is a fragile thing, but a few qualities stand out among companies consistently regarded most highly by their peers—earnings growth, product innovation, and ambitious operating goals. Merck obviously has that formula down to a science. For the third year in a row, the pharmaceutical giant scored highest among 305 of the largest U.S. companies evaluated by thousands of top executives, directors, and security analysts participating in FORTUNE's seventh annual corporate reputations survey. Just behind Merck is Rubbermaid, runner-up last year as well.

Several others grew considerably in stature in the tough and informed judgment of competitors and other experts who did the scoring within each industry. Wal-Mart Stores, which got big enough to be included in the competition only a year ago, shot to the No. 5 spot from its already stunning debut as No. 9. Boeing, which took a dive to 19th last year after four appearances among the ten most admired, rose 11 places to No. 8. Big Oil made a comeback: Exxon, last seen in the top ten three years ago, leaped 15 places to No. 6, while Shell Oil, No. 10, rejoined the elite after a year's absence. Herman Miller, the furniture company, also made it back after a year away. Just one company is a first-timer among the ten—PepsiCo, which jumped to No. 7 from No. 14 last year.

Of the five companies that failed to hold a spot at the top, Procter & Gamble slipped from No. 4 to tie Coca-Cola at 13th; Liz Claiborne, which was No. 5, fell to 16th; and RJR Nabisco, formerly tied for No. 9, wound up 17th. (The votes were cast from September 13 to November 1, so most evaluations of RJR preceded Chairman Ross Johnson's ill-fated management buyout proposal, which was announced October 20 and culminated in his losing the company to Kohlberg Kravis Roberts.) J.P. Morgan's steeper fall from No. 8 to No. 21 matched the rather ill repute in which many financial institutions are held these days. Dow Jones, which publishes the *Wall Street Journal*, proved that fame can indeed be fleeting, tumbling from No. 3 to No. 24. Like many publishers, the company is suffering through a post-crash slump in financial advertising.

The reigning champ, Merck, beat the competition handily, taking first place in six of eight individual measures of reputation. Rated on a scale of ten in each category, Merck averaged 8.87 this year after a best-for-any-year 9.00 in the previous survey. Merck is expected to report an 18.5% sales increase for 1988, not far off the 22.6% of 1987; security analysts predict earnings per share will rise 36%, barely below the 37.7% of the year before. Try compounding *that* growth rate.

New products keep doing the job for Merck—among them the ulcer preparation Pepcid and cholesterol-lowering Mevacor. Last year's sales of the two-year-old cardio-

HOW IT WAS DONE

■ To compile the seventh annual Corporate Reputations Survey, FORTUNE polled nearly 8,000 senior executives, outside directors, and financial analysts. They were asked to rate the ten largest companies in their own industry (a shorter list in some cases) on eight attributes of reputation, using a scale of 0 (poor) to 10 (excellent). The attributes were quality of management; quality of products or services; innovativeness; long-term investment value; financial soundness; ability to attract, develop, and keep talented people; community and environmental responsibility; and wise use of corporate assets.

The survey covers 305 companies in 32 industry groups that appear in the FORTUNE 500 and FORTUNE Service 500 directories. Companies are assigned to a group according to the business that contributed most to 1987 sales. Industries with fewer than four major companies—jewelry and silverware, leather, toys and sporting goods—were excluded.

Mergers and buyouts have changed the ownership of many companies, but those that continue to file their own financial documents remain eligible for the list.

AT THE TOP & BOTTOM OF THE 305 COMPANIES

THE MOST ADMIRED

Merck retains the title as the most admired of 305 large U.S. companies. Shell, Herman Miller, Boeing, and Exxon return to the top after a year's absence or more, while PepsiCo makes its debut.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Merck** Pharmaceuticals	8.87
2	2	**Rubbermaid** Rubber products	8.41
3	6	**3M** Scientific/photographic equip.	8.18
4	7	**Philip Morris** Tobacco	8.15
5	9*	**Wal-Mart Stores** Retailing	8.12
6	21	**Exxon** Petroleum refining	8.05
7	14	**PepsiCo** Beverages	8.04
8	19	**Boeing** Aerospace	8.03
9	12	**Herman Miller** Furniture	7.99
10	11	**Shell Oil** Petroleum refining	7.96

*Wal-Mart was tied in score with RJR Nabisco last year.

THE LEAST ADMIRED

FCA heads the list of cellar dwellers for the second consecutive year. BankAmerica, LTV, and Kaiser-Tech upgrade their images a little, while Manny Hanny and three S&Ls are new to the bottom ten.

RANK	LAST YEAR	COMPANY	SCORE
305	306	**Financial Corp. of America** Savings institutions	1.82
304	296	**Gibraltar Financial Corp.** Savings institutions	3.34
303	301	**Texas Air** Transportation	3.67
302	294	**Meritor Financial Group** Savings institutions	3.70
301	304	**BankAmerica** Commercial banking	3.82
300	303	**LTV** Metals	3.88
299	–	**Goldome** Savings institutions	4.08
298	298	**Control Data** Computers (and office equip.)	4.17
297	291	**Manufacturers Hanover** Commercial banking	4.18
296	299	**KaiserTech** Metals	4.21

ILLUSTRATIONS BY IVAN CHERMAYEFF

vascular drug Vasotec are estimated to have jumped 60% to $1 billion, a record for any Merck product. The drug controls high blood pressure and is effective in treating heart attack patients. With one of the highest research and development budgets of any pharmaceutical company—$650 million, or 10.8% of sales, in 1988—and what security analysts consider one of the most productive research teams, Merck keeps its medicine chest full. "The very special thing we have," says Chairman P. Roy Vagelos, "is the ability to spot early those areas that might lead to breakthroughs, by being very good at the scientific side—biology and chemistry—while also being able to recognize the medical importance of what we discover."

Among the products now awaiting FDA approval are Plendil for high blood pressure; Losec, Merck's second ulcer drug; and a vaccine for childhood meningitis. Also in development is a drug called Proscar, which analysts say could be a blockbuster—it shows promise of shrinking enlarged prostates without surgery.

> **"We have a great team spirit. Our people want to be the Marines. They want to be the finest. We hire eagles and teach them to fly in formation."**

Like many of the top ten companies, No. 2 Rubbermaid has a sustained growth record it credits to a strong strategic plan for good times and bad. For the past five years, Rubbermaid has surpassed the goal Chairman Stanley Gault set in 1980: 15% average annual increases in sales, profits, and earnings per share. That's quite a feat for 1988, considering that price hikes on resin used to make many of the company's products—which range from toys and trash containers to dish drains—raised Rubbermaid's overall material costs by well over $100 million, or 50%. But thanks to tight expense controls, productivity improvements, and the company's first price increases in two years, Rubbermaid's 1988 earnings are estimated to have been up 17%, to $99 million, and sales up 18%, to $1.19 billion. Says Gault: "We set very demanding and ambitious objectives. But we meet them—best of all, we frequently exceed them." Ranked second overall for product quality and innovativeness, Rubbermaid aims to introduce 200 new products a year. A recent addition is plastic office furniture.

3M, sixth overall a year ago, is now No. 3. The maker of some 50,000 products ranging from Post-it notes and videocassettes to bioelectronic ears (implants that restore hearing for those with inner-ear damage), 3M earned its highest score, 8.58, for innovativeness. Says Theresa Gusman, a security analyst at Salomon Brothers: "3M gives people an environment in which they can create, and they just come up with brilliant idea after brilliant idea." The company aims to generate 25% of sales from products added in the past five years.

Philip Morris's reputation proved sound enough to withstand an apparent hit from the evaluators for some of its nontobacco acquisitions—and its big offer for Kraft occurred during the balloting. Ranking fourth overall and in the top three in long-term investment value, financial soundness, and ability to attract, develop, and keep talented people, the company scored only 42nd for wise use of corporate assets. Security analysts have criticized the performance of two earlier acquisitions, Miller Brewing and General Foods, and some say the $13 billion Philip Morris paid for Kraft could have been put to better use, such as a stock buyback.

On the other hand, others applaud the company for using its tobacco earnings to diversify into potentially synergistic businesses and expand overseas. And even the critics can't fault a company much that is building volume (up 1.5% last year) in the highly profitable but shrinking domestic tobacco business. "We never let anybody think that just because the market is declining, that's any excuse for us to lose volume," says Chairman Hamish Maxwell.

Following a rigorous downsizing of operations and Draconian cost cuts, Exxon climbed back to the top ten. Still the second-largest U.S. industrial corporation behind General Motors (which rose from 254th to 231st this year), Exxon placed sixth overall and towered above its petroleum refining competitors in all but three measures of reputation. Its score of 9.34 for financial soundness was the highest awarded to any company on any attribute in this year's survey. Exxon's aggressive buyback of $13 billion in stock since 1983 has kept share earnings strong, while chemical profits and higher refining and marketing margins helped cushion last year's fall in crude oil prices.

Coca-Cola has a market edge over Pepsi in the global cola wars, but PepsiCo is, for now at least, the more admired soldier. The company ranked No. 7 overall and took first place in the beverage industry in six of eight attributes, including ability to get and keep good people. Says Chief Executive D. Wayne Calloway: "We have a great team spirit. Our people want to [illegible] the Marines. They want to be the finest. We hire eagles and teach them to fly in formation." PepsiCo has generated impressive profits from all three of its large and growing business lines: soft drinks, Frito-Lay snack foods, and restaurants—Kentucky Fried Chicken, Pizza Hut, Taco Bell. Security analysts estimate that PepsiCo's 1988 share earnings rose 26%.

Concentration of effort is one reason for PepsiCo's success. Once the owner of such diverse businesses as North American Van Lines and Wilson Sporting Goods, PepsiCo shed all its distractions outside the food and beverage business by 1986. That year it added Seven-Up International and MEI's soft drink business and then made its restaurant group the largest in the field by taking on Kentucky Fried Chicken. This gave it more outlets than McDonald's. Can the company maintain its momentum? Says Calloway: "We can be as big and successful as we allow ourselves to think we can be."

THANKS TO a boom in its commercial aircraft business, No. 8 Boeing boosted earnings 27% in 1988, according to security analyst estimates. The company wrote a record number of new plane orders worth nearly $30 billion last year, and the backlog (over 1,000 aircraft) is unprecedented. Boeing beat competitors in the aerospace industry in every measure of reputation and improved its overall score for product quality to third, from seventh last year. Still not satisfied, Chairman Frank Shrontz says, "We're putting a lot of emphasis on improving the quality of our products and our processes. Our objective is to be No. 1 in product quality and technical excellence."

How big is big? It depends on how you're

REPORTER ASSOCIATE *Susan E. Kuhn*

EIGHT KEY ATTRIBUTES OF REPUTATION

COMMUNITY AND ENVIRONMENTAL RESPONSIBILITY

MOST ADMIRED	SCORE
Johnson & Johnson	8.31
E.I. du Pont de Nemours	8.16
Merck	8.10

LEAST ADMIRED	SCORE
Financial Corp. of America	2.38
Texas Air	3.27
Gibraltar Financial	4.07

USE OF CORPORATE ASSETS

MOST ADMIRED	SCORE
Merck	8.54
Wal-Mart Stores	8.36
Rubbermaid	8.20

LEAST ADMIRED	SCORE
Financial Corp. of America	1.17
Gibraltar Financial	2.92
BankAmerica	3.06

INNOVATIVENESS

MOST ADMIRED	SCORE
Merck	9.06
Rubbermaid	8.67
3M	8.58

LEAST ADMIRED	SCORE
Financial Corp. of America	2.78
BankAmerica	3.52
Gibraltar Financial	3.75

ABILITY TO ATTRACT, DEVELOP, AND KEEP TALENTED PEOPLE

MOST ADMIRED	SCORE
Merck	8.96
Philip Morris	8.35
Wal-Mart Stores	8.20

LEAST ADMIRED	SCORE
Financial Corp. of America	1.42
Gibraltar Financial	3.15
LTV	3.32

QUALITY OF MANAGEMENT

MOST ADMIRED	SCORE
Merck	9.10
Wal-Mart Stores	9.08
Rubbermaid	8.98

LEAST ADMIRED	SCORE
Financial Corp. of America	2.36
Gibraltar Financial	3.36
Equitable Life Assurance	3.54

VALUE AS LONG-TERM INVESTMENT

MOST ADMIRED	SCORE
Merck	8.82
Philip Morris	8.80
Rubbermaid	8.39

LEAST ADMIRED	SCORE
Financial Corp. of America	0.60
Gibraltar Financial	2.50
LTV	3.00

FINANCIAL SOUNDNESS

MOST ADMIRED	SCORE
Exxon	9.34
Merck	9.22
Philip Morris	8.98

LEAST ADMIRED	SCORE
Financial Corp. of America	0.47
LTV	2.10
Texas Air	2.36

QUALITY OF PRODUCTS OR SERVICES

MOST ADMIRED	SCORE
Merck	9.10
Rubbermaid	9.09
Boeing	8.79

LEAST ADMIRED	SCORE
Texas Air	3.44
Financial Corp. of America	3.51
Meritor Financial Group and Gibraltar Financial (tie)	4.67

WHAT THEY DID FOR SHAREHOLDERS

MOST ADMIRED

COMPANY	TOTAL RETURN TO INVESTORS 1977-87 annual average
Merck	22.5%
Rubbermaid	26.3%
3M	15.1%
Philip Morris	23.4%
Wal-Mart	46.0%
Exxon	20.9%
PepsiCo	17.8%
Boeing	20.5%
Herman Miller	27.4%
Shell	N.A.
MEDIAN	22.5%
FORTUNE INDUSTRIAL 500 MEDIAN	17.2%
FORTUNE SERVICE 500 MEDIAN	16.9%

LEAST ADMIRED

COMPANY	TOTAL RETURN TO INVESTORS 1977-87 annual average
Financial Corp. of America	0.7%
Gibraltar Financial	−5.4%
Texas Air	4.0%
Meritor Financial Group	0.5%
BankAmerica	−6.7%
LTV	−8.1%
Goldome	N.A.
Control Data	5.4%
Manufacturers Hanover	3.6%
KaiserTech	0.6%
MEDIAN	0.6%

BIG RETURNS AT THE TOP

The most admired companies have delivered first-rate returns to shareholders year after year. Wal-Mart's average annual return (dividends plus appreciation in the stock) over the past ten years leads all 305 companies surveyed. The least admired group is short on payoff as well as reputation.

measuring. With fiscal 1988 sales of $714 million, Herman Miller, the office furniture maker, is the smallest of the ten most admired. But in terms of reputation, it rose to No. 9 and ranked fourth overall in quality of products and services and sixth for management and innovativeness. Says CEO Richard Ruch: "Our core values center around innovation, not just in product design but also in the way we manage." Since 1950, Herman Miller has had a participative management system in which all employees share in decision-making as well as profits.

Widely regarded as a leader in furniture design, Herman Miller has several of its works from the 1950s and 1960s exhibited in New York's Museum of Modern Art and other places of honor. The new form-fitting Ergon 2 office chair is a masterpiece in its own right. Named by FORTUNE in December as one of the 12 products of the year, the Ergon 2 has generated $50 million in sales since its introduction in June.

Shell Oil, the U.S. subsidiary of the Royal Dutch/Shell Group, advanced one notch to No. 10 despite a difficult year. Lower oil prices and an explosion at Shell's Norco, Louisiana, refinery, which cut gasoline production, hurt the company's performance. While profits were rising at most big oil companies in 1988, Shell's earnings declined for two quarters. But security analysts insist these troubles are temporary and say the company is well positioned for the longer term. "Shell keeps honing all its operations continually," says Benjamin Rice, an analyst at Brown Brothers Harriman.

At the other end of the scorecard, six of this year's cellar dwellers have hit the depths at least once before. Two—Financial Corp. of America, the least admired for the second straight year, and LTV, holder of that title two years ago—are bankrupt in fortune as well as reputation. FCA, based in Irvine, California, scored last in all but one attribute evaluated, and its overall score of 1.82 is the lowest recorded in the survey's seven years. FCA filed for bankruptcy in September, shortly after thrift regulators seized its chief operating subsidiary, American Savings, recently sold to a group headed by Robert Bass.

Manville and Bethlehem Steel escaped from the bottom ten this year. Manville climbed six notches in the rankings to place 12th from the bottom; solidly restructured under the firm hand of Chief Executive W. Thomas Stephens, it was about to emerge from bankruptcy at the time of the survey. Higher steel prices and a strong management effort to improve productivity and otherwise restore the company to good health helped lift Bethlehem Steel's financial results; in the survey, it jumped 26 places to 276th.

The rising tide in the steel industry buoyed several scores. Bethlehem and two other steelmakers—Inland Steel and LTV—were among the ten companies whose rankings improved the most in this year's survey. While "voluntary" import quotas and a weak dollar have helped fuel Big Steel's resurgence, the industry has also whipped itself into better competitive shape by shedding capacity and reducing operating costs. Chicago-based Inland, for example, has since 1982 reduced its work force over 40% to 21,700, trimmed capacity by 30%, and improved productivity (man-hours per ton of steel) by about the same percentage. The changes are beginning to yield excellent returns. Analysts expect Inland to post record earnings of $260 million in 1988. Profits for the industry, which lost some $12 billion between 1982 and 1986, will exceed $2 billion.

JUST AS an industry's good fortune can lift the reputations of its members, so its decline can drag them down. While two money-losing S&Ls—Gibraltar Financial and Meritor Financial Group—undoubtedly deserve their place among the survey's ten biggest point losers, even the strong and profitable Great Western Financial and H.F. Ahmanson, the two most admired in the business, saw their scores decline.

For the most part, however, the companies whose scores fell the most have much publicized problems. Floundering food giant Pillsbury tumbled further than any other company on the list—to No. 277 overall from No. 85. Its profits had been slumping before it agreed to be acquired by British behemoth Grand Metropolitan in December. Equitable Life Assurance's deteriorating financial condition, stemming from a bad gamble on interest rate–sensitive products, matched its sharp drop in score. Writes a survey respondent: "Equitable's troubles may drag the whole life insurance industry to a new low."

Overall, 1988 wasn't a good year for banks. Manufacturers Hanover (No. 297) was deposited in the bottom ten for the first time. It joins BankAmerica, which has been there for four straight years. A $1.7 billion addition to loan loss reserves contributed to Manny Hanny's record deficit of $1.14 billion in 1987. But while it's the biggest U.S. bank lender to Argentina and is still paying the price for its eagerness to make loans in Latin America and the Southwest, the bank's cost controls and asset sales bolstered earnings last year.

REPUTATIONS, which sometimes can be lost in a hurry, often are difficult to rebuild. IBM topped the most admired list for the first four years before losing out to Merck in 1986. But even after emerging from a three-year earnings slump in 1988, IBM dropped two notches in the survey and is now ranked 34th. For the first time, IBM lost its No. 1 spot in its own industry—it slipped to No. 3—as Hewlett-Packard got the top score and Apple placed second.

Despite its continuing drop in the rankings, IBM's overall score did improve slightly this year, suggesting that some of Chairman John Akers's efforts to revitalize the corporation are beginning to be recognized. After revamping its product line and improving its responsiveness to customers, IBM gained more points for quality of products or services than any other attribute; it jumped to No. 64 from No. 92. Following a sweeping internal housecleaning and a series of management shuffles, however, IBM slipped from No. 24 to No. 40 in ability to attract, develop, and keep talented people.

James Pasman, head of KaiserTech, which ranked a sorry 296th, knows how hard it is to restore a tarnished reputation. Since 1984, KaiserTech has shed its panoply of nonaluminum businesses, ranging from chemicals to food service packaging, and used the proceeds to reduce debt 52%, to $755 million. That transformation, coupled with a rise in aluminum prices and corporate cost reductions, helped put KaiserTech back in the black in 1988 after six money-losing years. Then, in October, along came Maxxam Group to buy the company, paying shareholders a 28% premium. Says Pasman: "I think KaiserTech is a very different company from what it's remembered to be but, unfortunately, perceptions often don't change as fast as the facts." Especially when the perceptions are negative.

BIGGEST GAINERS & LOSERS

BIGGEST GAINS OVER LAST YEAR

UAL, formerly called Allegis, led last year's big point losers. But after a change in name and management, the parent of United Airlines improved dramatically. Many other large gainers this year are reaping the rewards of major restructuring.

COMPANY	CHANGE	PERCENT	SCORE
Bethlehem Steel	+1.43	38.8	5.12
UAL	+1.42	30.2	6.12
Minstar	+0.95	18.8	6.01
Inland Steel Industries	+0.90	16.9	6.22
Fruit of the Loom	+0.82	16.5	5.78
Federal National Mortgage Association	+0.80	14.5	6.30
Premark International	+0.77	12.4	6.99
LTV	+0.64	19.8	3.88
Joseph E. Seagram & Sons	+0.63	11.1	6.32
BankAmerica and	+0.61	19.0	3.82
Amax (tie)	+0.61	12.0	5.71

BIGGEST LOSSES OVER LAST YEAR

Sagging profits, sinking stock prices, and the sins of second-rate management sullied the reputations of many of this year's biggest losers. Gibraltar and Meritor both landed in the bottom ten overall. Federated and Pillsbury have been acquired.

COMPANY	CHANGE	PERCENT	SCORE
Pillsbury	−1.72	−25.2	5.10
Equitable Life	−1.38	−23.4	4.51
Harsco	−1.18	−16.8	5.86
Avon Products	−1.11	−17.8	5.13
Gibraltar Financial	−1.02	−23.4	3.34
Fieldcrest Cannon	−1.00	−16.1	5.21
Federated Department Stores	−0.99	−17.6	4.62
Northrop	−0.92	−14.9	5.27
SmithKline Beckman	−0.88	−14.5	5.18
Meritor Financial Group	−0.86	−18.9	3.70

HOW COMPANIES RANK IN 32 INDUSTRIES

Industry groups are based on U.S. Office of Management and Budget categories. Companies are assigned to industries according to the business that contributed most to 1987 sales.

MINING, CRUDE-OIL PRODUCTION

Freeport-McMoRan and Vulcan share the top spot, but Mitchell beats them both in social responsibility.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Freeport-McMoRan**	6.67
1	3	**Vulcan Materials**	6.67
3	5	**Cyprus Minerals**	6.27
4	4	**Louisiana Land & Exploration**	6.01
4	2	**Mitchell Energy**	6.01
6	7	**Union Texas**	5.96
7	6	**Nerco**	5.90
8	8	**Westmoreland Coal**	5.36
9	–	**Maxus Energy**[1,2]	5.34
10	9	**Inspiration Resources**	5.23

PETROLEUM REFINING

Shell is displaced by Exxon, but still leads in quality of products and ability to attract talented people.

RANK	LAST YEAR	COMPANY	SCORE
1	2	**Exxon**	8.05
2	1	**Shell Oil**	7.96
3	3	**Amoco**	7.58
4	4	**Arco**	7.27
5	6	**Mobil**	7.04
6	–	**BP America**[1,3]	6.85
7	5	**Chevron**	6.82
8	9	**USX**	5.48
9	7	**Tenneco**	5.09
10	10	**Texaco**	4.64

UTILITIES

BellSouth, which rang up the highest profit in its industry in 1987, ousts former leader Bell Atlantic.

RANK	LAST YEAR	COMPANY	SCORE
1	2	**BellSouth**	7.57
2	1	**Bell Atlantic**	7.48
3	3	**American Information Tech.**	7.27
4	5	**Pacific Telesis Group**	7.20
5	4	**Nynex**	7.00
6	7	**Southwestern Bell**	6.91
7	6	**US West**	6.85
8	8	**Pacific Gas & Electric**	6.55
9	10	**GTE**	6.49
10	9	**Southern**	6.18

---

[1] Not ranked last year.
[2] Name changed from Diamond Shamrock.
[3] Name changed from Standard Oil.

FOREST PRODUCTS

Kimberly-Clark, the maker of Kleenex tissues and Huggies diapers, leads in all categories but social responsibility, where Weyerhaeuser is most admired.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Kimberly-Clark	7.38
2	2	Scott Paper	6.88
3	5	Mead	6.79
4	4	James River Corp. of Virginia	6.56
5	7	Weyerhaeuser	6.45
6	8	Boise Cascade	6.34
7	6	Georgia-Pacific	6.25
8	–	Stone Container[1]	6.02
9	9	Champion International	5.96
10	10	International Paper	5.76

PHARMACEUTICALS

Led by top-ranking Merck, the industry has a median score of 7.11, the highest of all 32 groups surveyed.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Merck	8.87
2	2	Johnson & Johnson	7.93
3	3	Abbott Laboratories	7.67
4	4	Eli Lilly	7.61
5	5	Bristol-Myers	7.55
6	6	Pfizer	6.66
7	9	Warner-Lambert	6.56
8	7	American Home Products	6.37
9	8	Baxter International[2]	6.17
10	10	SmithKline Beckman	5.18

CHEMICALS

New leader Dow is expected to report 1988 per share earnings that are double the prior year's. Runner-up Du Pont still leads in five measures of reputation.

RANK	LAST YEAR	COMPANY	SCORE
1	2	Dow Chemical	7.92
2	1	Du Pont	7.84
3	3	Bayer USA	6.86
4	6	BASF	6.63
5	4	American Cyanamid	6.50
6	5	Monsanto	6.44
7	7	Hoechst Celanese	6.41
8	–	Hanson Industries NA[1]	5.58
9	9	W.R. Grace	5.03
10	10	Union Carbide	4.78

TEXTILES

Springs leaps to No. 1, having shifted its focus away from apparel toward the growing home and industrial fabrics businesses. Guilford leads in three traits.

RANK	LAST YEAR	COMPANY	SCORE
1	3	Springs Industries	7.12
2	–	Guilford Mills[1]	7.04
3	1	Armstrong World Industries	6.92
4	4	Shaw Industries	6.90
5	2	West Point-Pepperell	6.64
6	–	Dixie Yarns[1]	6.62
7	8	DWG	5.59
8	7	Fieldcrest Cannon	5.21
9	9	Burlington Holdings	4.86
10	10	United Merchants & Mfrs.	4.26

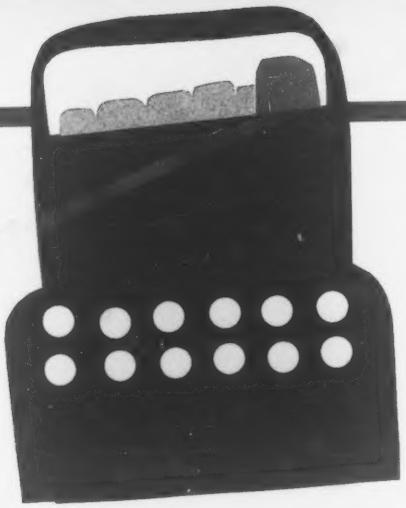
RUBBER PRODUCTS

Although four new companies have joined the industry, Rubbermaid is still No. 1 for all eight attributes.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Rubbermaid	8.41
2	3	Cooper Tire & Rubber	7.05
3	4	Premark International	6.99
4	2	Goodyear Tire & Rubber	6.82
5	–	Standard Products[1]	6.52
6	–	Carlisle[1]	5.99
6	5	GenCorp	5.99
8	6	Armtek[3]	5.82
9	–	Envirodyne Industries[1]	5.81
10	–	Knoll International[1]	4.89

---

[1] Not ranked last year.
[2] Name changed from Baxter Travenol Labs.
[3] Acquired by Mark IV Industries.



RETAILING

Wal-Mart takes first place in seven categories. Newcomer Dayton Hudson wins in social responsibility.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Wal-Mart Stores**	8.12
2	–	**Dayton Hudson**[1]	6.46
3	3	**J.C. Penney**	6.41
4	2	**May Department Stores**	6.40
5	5	**K mart**	6.27
6	6	**Sears Roebuck**	5.60
7	4	**Kroger**	5.48
8	7	**American Stores**	5.19
9	10	**Safeway Stores**	4.84
10	8	**Federated Department Stores**[2]	4.62

SOAPS, COSMETICS

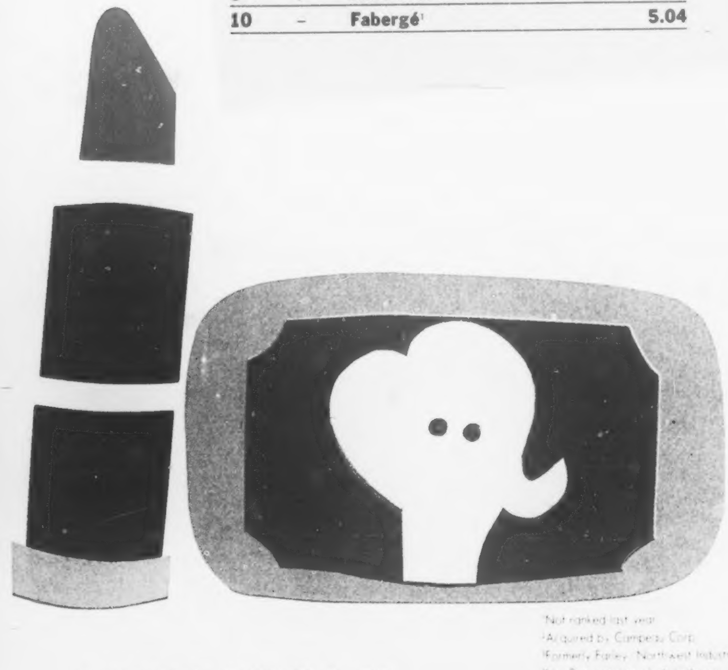
Strong sales and earnings have helped keep P&G head and ~~shoulders above~~ the competition. Revlon moves up to No. 7 after a corporate makeover.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Procter & Gamble**	7.90
2	2	**Intl. Flavors & Fragrances**	7.20
3	4	**Lever Brothers**	7.06
4	3	**Colgate-Palmolive**	6.76
5	5	**Clorox**	6.52
6	6	**Chesebrough-Pond's**	6.14
7	10	**Revlon Group**	5.45
8	8	**Ecolab**	5.18
9	7	**Avon Products**	5.13
10	–	**Fabergé**[1]	5.04

APPAREL

Though Liz Claiborne falls out of the overall top ten this year, it still sets the fashion in its group. Oxford's image unravels after a string of quarterly losses.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Liz Claiborne**	7.82
2	2	**VF**	7.44
3	3	**Hartmarx**	6.57
4	4	**Kellwood**	6.51
5	5	**Interco**	6.15
6	7	**Phillips-Van Heusen**	5.83
7	8	**Leslie Fay**	5.80
8	10	**Fruit of the Loom**[3]	5.78
9	9	**Warnaco Group**	5.56
10	6	**Oxford Industries**	5.55



FURNITURE

Herman Miller holds on to the winning seat. Hon, which falls four places, ranks last among its peers for product quality and ability to attract talented people.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Herman Miller**	7.99
2	–	**Masco**[4]	7.52
3	2	**Leggett & Platt**	6.92
4	–	**Ohio Mattress**[1]	6.76
5	–	**Kimball International**[1]	6.46
6	4	**Bassett Furniture Industries**	6.03
7	3	**Hon Industries**	5.98
8	5	**Mohasco**[5]	5.93

[1] Not ranked last year
[2] Acquired by Campeau Corp.
[3] Formerly Farley/Northwest Industries
[4] No. 2 in metal products last year
[5] Acquired by MHS Holdings

BEVERAGES

PepsiCo is tops in six categories, but Coca-Cola beats it in quality of products and financial soundness.

RANK	LAST YEAR	COMPANY	SCORE
1	1	PepsiCo	8.04
2	3	Coca-Cola	7.90
3	2	Anheuser-Busch	7.70
4	–	Coca-Cola Enterprises[1]	6.54
5	6	Joseph E. Seagram & Sons	6.32
6	4	General Cinema	6.31
7	5	Adolph Coors	6.25
8	7	Brown-Forman	6.20

TOBACCO

Philip Morris leads in six attributes; RJR, evaluated before it was bought out by Kohlberg Kravis Roberts, takes first place for asset use and innovativeness.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Philip Morris	8.15
2	2	RJR Nabisco	7.70
3	3	UST[3]	6.65
4	–	Universal[1,4]	6.48
5	4	American Brands	6.06

FOOD

Sara Lee, which had record earnings and sales in fiscal 1988, has led for three straight years. Despite its name, Occidental packs more beef than it pumps oil.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Sara Lee	7.62
2	2	General Mills	7.21
3	5	Kraft[2]	7.09
4	4	ConAgra	6.82
5	6	Ralston Purina	6.63
6	7	Borden	6.58
7	8	Archer Daniels Midland	6.16
8	3	Pillsbury	5.10
9	–	Beatrice[1]	4.99
10	10	Occidental Petroleum	4.98

[1] Not ranked last year.

[2] Acquired by Philip Morris.

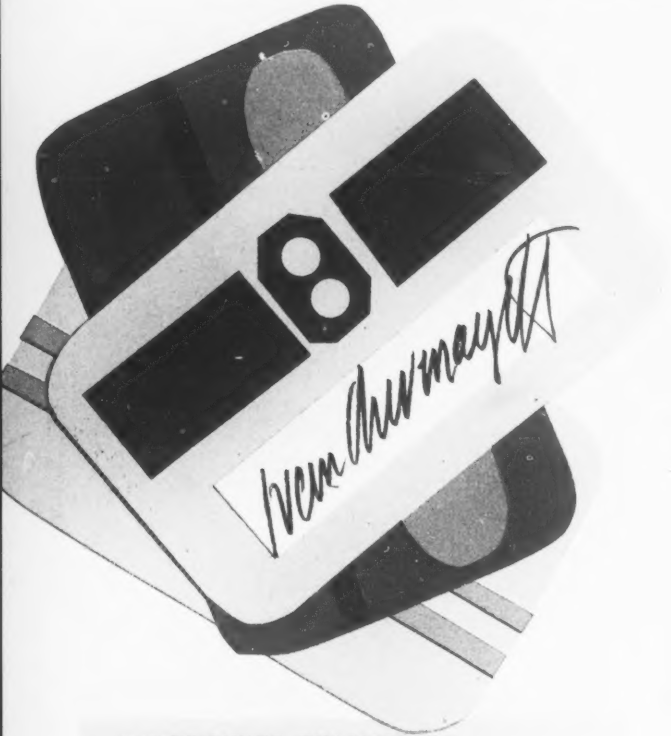
[3] Formerly United States Tobacco.

[4] Name changed from Universal Leaf Tobacco.

SAVINGS INSTITUTIONS

Despite a decline in its overall score, Great Western finishes first in all eight attributes of reputation.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Great Western Financial**	7.46
2	2	**H.F. Ahmanson**	6.99
3	4	**Home Federal Savings & Loan**	6.82
4	7	**Glenfed**	6.03
5	6	**Calfed**	5.92
6	5	**Great American First Savings**	5.65
7	–	**Goldome**[1]	4.08
8	8	**Meritor Financial Group**	3.70
9	9	**Gibraltar Financial**	3.34
10	10	**Financial Corp. of America**	1.82



DIVERSIFIED FINANCIAL

Industry leader Amex takes top billing in five traits. FNMA, the nation's largest private investor in residential mortgage loans, leaps to fourth place.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**American Express**	7.57
2	2	**Morgan Stanley Group**	7.19
3	–	**American International Group**[1]	6.62
4	10	**Federal National Mortgage Assn.**	6.30
5	3	**First Boston**	6.25
6	4	**Salomon**	6.20
7	6	**Aetna Life & Casualty**	6.09
8	8	**Merrill Lynch**	5.83
9	9	**Cigna**	5.75
10	7	**Travelers**	5.60

DIVERSIFIED SERVICE

EDS is No. 1 in six traits; Capital Cities in management quality; Hospital Corp. in social responsibility.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Electronic Data Systems**	7.01
2	–	**Capital Cities Comm./ABC**[1]	6.57
3	3	**McKesson**	6.52
4	–	**Ryder System**[1]	6.33
5	4	**Super Valu Stores**	6.13
6	7	**Hospital Corp. of America**	6.02
7	6	**Fleming Cos.**	5.93
8	–	**ARA Holding**[1]	5.72
9	9	**Fluor**	5.68
10	10	**National Intergroup**	5.22

COMMERCIAL BANKING

Though J.P. Morgan drops off the most admired list, it still brightens the image of this sorry bunch, which has the lowest median score of any group.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**J.P. Morgan**	7.65
2	3	**Citicorp**	6.97
3	2	**Bankers Trust New York**	6.88
4	5	**Security Pacific**	6.52
5	–	**First Chicago**[1]	5.44
6	6	**First Interstate Bancorp**	5.32
7	7	**Chase Manhattan**	5.31
8	8	**Chemical Banking**[2]	5.10
9	9	**Manufacturers Hanover**	4.18
10	10	**BankAmerica**	3.82

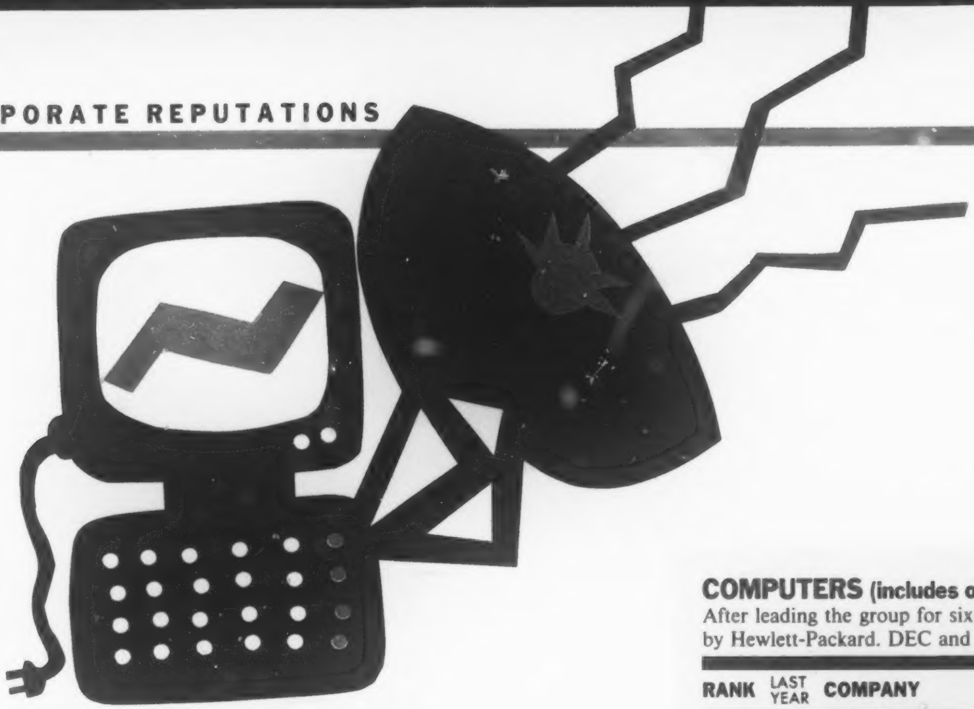
LIFE INSURANCE

Northwestern Mutual, which ranks No. 45 overall this year, has led its industry in all seven surveys.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Northwestern Mutual Life**	7.22
2	2	**Prudential of America**	7.05
3	3	**Aetna Life**	6.24
4	4	**Metropolitan Life**	6.19
5	10	**New York Life**	6.05
5	9	**Teachers Insurance & Annuity**	6.05
7	5	**Connecticut General Life**	5.95
8	7	**John Hancock Mutual Life**	5.77
9	6	**Travelers**	5.32
10	8	**Equitable Life Assurance**	4.51

[1] Not ranked last year

[2] Name changed from Chemical New York Corp.



COMPUTERS (includes office equipment)

After leading the group for six years, IBM is ousted by Hewlett-Packard. DEC and Apple switch places.

RANK	LAST YEAR	COMPANY	SCORE
1	3	Hewlett-Packard	7.60
2	4	Apple Computer	7.48
3	1	IBM	7.46
4	2	Digital Equipment	7.14
5	5	NCR	6.17
6	–	Amdahl[1]	5.85
7	7	Pitney Bowes	5.45
8	6	Unisys	5.33
9	8	Wang Laboratories	4.66
10	10	Control Data	4.17

PUBLISHING, PRINTING

Dow Jones is tops in five categories, but Gannett leads in innovativeness, Washington Post in investment value, New York Times in social responsibility.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Dow Jones	7.60
2	4	Washington Post	7.36
3	2	New York Times	7.33
4	3	Gannett	7.01
5	9	Tribune	6.88
6	8	Time Inc.	6.86
7	7	R.R. Donnelley & Sons	6.82
7	5	Times Mirror	6.82
9	6	Knight-Ridder	6.74
10	10	McGraw-Hill	5.73

ELECTRONICS

General Electric falls from 16th to 40th overall in this year's rankings, but it's still the leader of its group.

RANK	LAST YEAR	COMPANY	SCORE
1	1	General Electric	7.34
2	2	Emerson Electric	6.96
3	4	Motorola	6.84
4	3	American Telephone & Telegraph	6.81
5	6	Texas Instruments	6.66
6	5	Raytheon	6.58
7	7	TRW	6.37
8	8	Westinghouse Electric	6.24
9	9	Honeywell	6.04
10	10	ITT	5.45

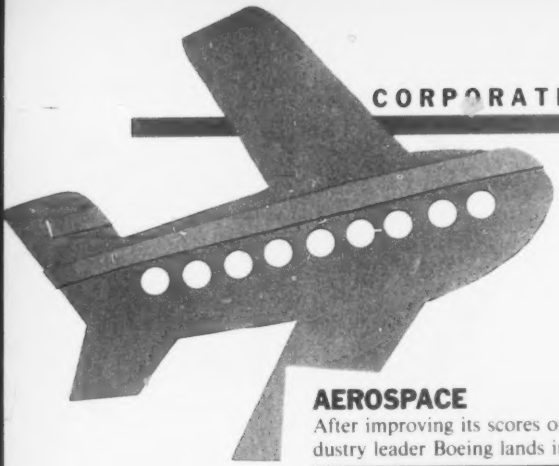
SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT

3M, the industry leader for six years in a row, makes its fourth appearance in the overall top ten this year.

RANK	LAST YEAR	COMPANY	SCORE
1	1	3M	8.18
2	2	Eastman Kodak	7.26
3	3	Xerox	6.95
4	5	EG&G	6.80
5	6	Becton Dickinson	6.28
6	4	Polaroid	6.17
7	7	Perkin-Elmer	6.14
8	8	Tektronix	6.01
9	10	General Signal	5.90
10	–	Fisher Scientific Group[1]	5.69

---

[1] Not ranked last year.



AEROSPACE

After improving its scores on all eight attributes, industry leader Boeing lands in the top ten overall.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Boeing	8.03
2	2	Martin Marietta	7.10
3	3	Rockwell International	6.46
4	4	Lockheed	6.39
5	5	McDonnell Douglas	6.17
6	7	General Dynamics	6.10
7	6	United Technologies	5.69
8	9	Textron	5.54
9	10	Allied-Signal	5.40
10	8	Northrop	5.27

TRANSPORTATION

UPS finishes first in seven measures, but AMR, American Airlines' parent, leads in innovativeness.

RANK	LAST YEAR	COMPANY	SCORE
1	1	United Parcel Service	7.66
2	2	AMR	7.10
3	3	Delta Air Lines	6.97
4	5	Union Pacific	6.37
5	6	Burlington Northern	6.14
6	9	UAL[2]	6.12
7	7	CSX	5.92
8	–	NWA[1]	5.36
9	8	Santa Fe Southern Pacific	5.13
10	10	Texas Air	3.67

TRANSPORTATION EQUIPMENT

Harley-Davidson, which controls 40% of the U.S. heavy motorcycle market, drives into first place; International Controls takes the back seat again.

RANK	LAST YEAR	COMPANY	SCORE
1	–	Harley-Davidson[1]	7.00
2	1	Fleetwood Enterprises	6.93
3	–	Minstar[4]	6.01
4	4	International Controls	5.25

MOTOR VEHICLES AND PARTS

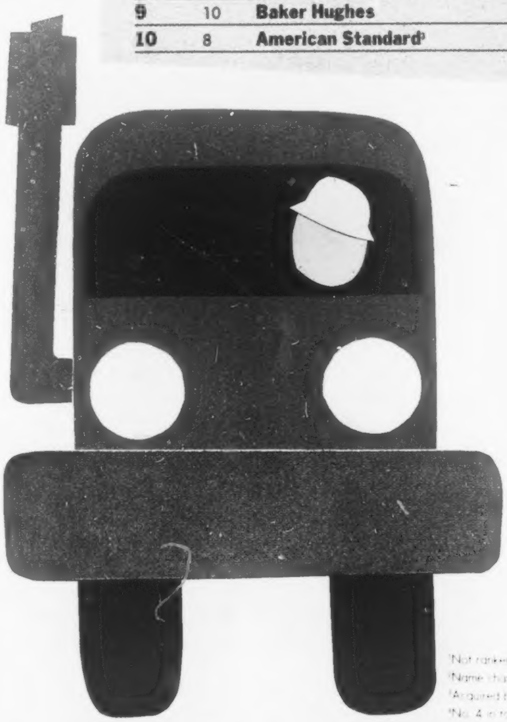
With hot-selling models like the Taurus and Sable, Ford is parked in first place. Mack slips, but its projected 1988 earnings were up over 400%.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Ford Motor	7.51
2	2	Dana	6.71
3	4	Paccar	6.34
4	3	Chrysler	6.17
5	–	Echlin[1]	5.87
6	–	Arvin Industries[1]	5.76
7	7	General Motors	5.70
8	8	Navistar International	5.59
9	6	Mack Trucks	5.48
10	9	Fruehauf	4.61

INDUSTRIAL AND FARM EQUIPMENT

No. 1 Cat is now in the midst of a vast plant modernization program. Renewed demand for tractors and other farm equipment pushes Deere to No. 2.

RANK	LAST YEAR	COMPANY	SCORE
1	4	Caterpillar	7.09
2	6	Deere	6.84
3	3	Black & Decker	6.80
4	1	Cummins Engine	6.38
5	7	Ingersoll-Rand	6.19
6	5	Brunswick	6.16
7	9	Dresser Industries	5.91
8	–	Trinova[1]	5.88
9	10	Baker Hughes	5.83
10	8	American Standard[3]	5.66



[1] Not ranked last year
[2] Name changed from Allegis
[3] Acquired by Kelso & Co.
[4] No. 4 in toys, sporting goods last year

BUILDING MATERIALS

Corning, the maker of Steuben crystal and Pyrex cookware, received its highest score for product quality. USG falls four places after assuming huge debts.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Corning Glass Works**	7.46
2	2	**PPG Industries**	7.00
3	4	**Owens-Corning Fiberglas**	6.19
4	6	**Norton**	6.16
5	5	**Owens-Illinois**	5.95
6	–	**Lafarge**[1]	5.58
7	3	**USG**	5.48
8	7	**Jim Walter**	5.47
9	9	**National Gypsum**	4.92
10	10	**Manville**	4.50

METAL PRODUCTS

Illinois Tool, No. 1 for the second year, leads in seven measures; Gillette is first for product quality.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Illinois Tool Works**	7.14
2	3	**Stanley Works**	6.83
3	–	**Masco Industries**[1]	6.77
4	4	**Gillette**	6.53
5	5	**Ball**	6.45
6	7	**Emhart**	6.28
7	6	**Crown Cork & Seal**	6.14
8	–	**Tyco Laboratories**[1]	6.11
9	–	**Harsco**[4]	5.86
10	8	**Triangle Industries**	5.38

METALS

Now benefiting from a major restructuring and higher aluminum prices, top-scoring Alcoa is expected to report a 330% rise in 1988 share earnings.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Aluminum Co. of America**	6.94
2	2	**Reynolds Metals**	6.83
3	4	**Inland Steel Industries**	6.22
4	–	**Phelps Dodge**[1]	5.86
5	–	**Amax**[2]	5.71
6	7	**Armco**	5.32
7	5	**Penn Central**	5.16
8	9	**Bethlehem Steel**	5.12
9	8	**KaiserTech**[3]	4.21
10	10	**LTV**	3.88

[1] Not ranked last year

[2] No. 10 in mining, crude-oil production last year

[3] Acquired by Maxxam Group

[4] No. 2 in transportation equipment last year

JAPAN'S GUNG-HO U.S. CAR PLANTS

Leaping the oceans with the latest technology, Japanese managers are drilling their own ways into enthusiastic—but sometimes stressed-out—American workers.

■ *by Louis Kraar*

THIS IS THE new wave of Japanese exports that may in the end have the most profound effect of them all: the car factories that are shaking up small American communities and transforming the workplace culture. Japan's Auto Alley, which cuts through six heartland states, already provides over 15,000 assembly jobs. Mazdas are made in Michigan, Hondas in Ohio, Toyotas in Kentucky, and Nissans in Tennessee. Mitsubishi, in a joint venture with Chrysler, is gearing up in Illinois, while Subaru and Isuzu are building a plant in Indiana. Not by accident, the Japanese are injecting their high-tech equipment into mostly rural areas, far from unions and experienced auto workers who, in the words of President Tetsuo Chino of Honda North America, "might have some bad habits."

As outposts of production methods long triumphant in the world market, the factories of Japan's Auto Alley are a tremendous boon for the U.S. Their managers have trained and motivated American workers to turn out cars of a quality comparable to the made-in-Japan original—a feat with far-reaching implications for the rest of U.S. manufacturing. The achievement, like any of such magnitude, is not without its costs.

Tranquil towns where few ever bothered to lock their doors find that a big, new auto factory brings social and fiscal strains as well as paychecks. Jobs at the auto transplants can be grueling: Veteran U.S. operators such as Nissan are having to work at maintaining the initial enthusiasm on the factory floor. To Detroit's Big Three, Japan's Auto Alley represents a huge addition to capacity in an industry that is padlocking surplus plants. If facilities in Canada are included, Japan's automakers will be able to turn out 2.2 million cars and light trucks a year in North America by the early 1990s—roughly equivalent to Chrysler's sales last year.

To win these new payrolls, state and local governments dangled incentives that seem excessive even by the standards of such bidding contests. Kentucky's package of goodies to cash-rich Toyota, including interest on funds the state had to borrow, will cost its citizens more than $280 million over 20 years. The cost of the come-ons per job created, which worked out to $11,000 when Tennessee bagged Nissan in 1980, ballooned to $50,000 in Kentucky. Wallace Wilkinson, who won the governorship after sharply criticizing this largess, has discovered that most of Kentucky's federal funds for job training are committed to Toyota.

The transplants profess to be equal opportunity employers, but their location strategy tells another story. Robert E. Cole, a University of Michigan business professor, has spotted keen Japanese interest in the ethnic composition of American communities they select and accuses Japanese automakers of deliberately avoiding blacks. U.S. makers of auto parts claim to see discrimination of another sort. So far, most components of cars built in Japan's Auto Alley are made by Japanese companies, either at home or here.

In Marysville, Ohio, all ranks eat together in the cafeteria and wear white Honda uniforms.

MASAHIRO UCHIDA, executive vice president of Mazda's Michigan operation, finds nothing wrong with this: "We didn't force our suppliers to come here. Of course, they have worked with us in Japan for a long time, so we have a good relationship and they know how Mazda operates." Mazda says the reject rate for U.S. parts from American companies is anywhere from three to five times higher than for those from Japanese-run suppliers. Nissan says the reject rate is twice as high.

More often than not, U.S. suppliers are entrusted with such items as seats, tires, glass, and office supplies. Mike Plumley, chairman of Plumley Companies Inc. of Paris, Tennessee, is proud of persuading Japanese transplants to buy rubber parts after a long effort. "The opportunity is there for anybody who wants to get it," he says, "but the weak aren't going to make it."

In Bluegrass Country, Toyota's "personal touch" program picks up part of the tab when Japanese and American employees bowl together.

Neither will ineffectual local governments, hidebound union leaders, or slackers on the assembly line. But while this cross-cultural drama is still unfolding, the evidence to date indicates that the problems are transitional and the benefits can be permanent. Take, for example, Georgetown, Kentucky (pop. 12,500). Huge semitrailers routinely take an illegal shortcut to the Toyota plant by rumbling down tiny Main Street, where farmers from the surrounding Bluegrass Country like to sit on sidewalk benches and chat. "We're bombarded with trucks," complains William L. Hamilton, an insurance broker and president of the chamber of commerce. If the community had known that Toyota was coming, he says, Georgetown could have persuaded the state to build a bypass road along with the four-lane highway it provided the plant.

Further dismaying the strait-laced town, the Osaka Health Spa, a massage parlor, opened just a block from city hall while the plant was under construction. An Oriental at the spa, according to her arrest record, dispensed more than massages. "We busted her for prostitution," says Mayor Tom Prather, 37, "but could not shut down the place."

The stress of accommodating Toyota prompted Prather's predecessor to resign in September 1986, after only nine months in office. Prather had to persuade Toyota to pay for expanding municipal services. Toyota put its $1.1 billion factory in Scott County, just outside Georgetown's boundaries—and taxing authority. Prather recalls telling managers of the auto plant: "If your coming here is going to remain a positive event for Georgetown, we've got to have a revenue stream." After four months of negotiations, Toyota agreed to have its plant annexed into Georgetown.

Toyota's presence has raised everyone's taxes. To get more revenue, the town imposed a 1% tax on wages and salaries atop an identical county tax Georgetowners already paid. Prather's municipal budget has nearly doubled to $4 million, enabling the city to bolster the police force with more men and vehicles and renovate city hall. Realizing that many local people felt shortchanged, Toyota has donated $1 million for a community center, plus ten cars to the city and county. The automaker also contributes an amount equal to the school taxes it is exempt from paying and voluntarily services the loan for a new sewer plant. A Toyota executive insists that the automaker wants to preserve the quality of life that attracted it to Georgetown.

BEFORE NISSAN BUILT its car and truck plant in Smyrna, Tennessee (pop. 14,000), local officials made certain that the company would pay for most of the municipal services it required. The town runs a budget surplus. Honda has brought prosperity without upsetting its host communities in Ohio. The Japanese automaker, which began modestly in Marysville (pop. 8,000) with a motorcycle assembly operation in

REPORTER ASSOCIATE *Rosalind Klein Berlin*

PHOTOGRAPHS BY LOUIS PSIHOYOS—MATRIX

Privacy? Toyota's Kentucky chief, Fujio Cho, must get along with his No. 2.

people." Toyota can afford to be choosy because the state picks up much of the bill.

Landing a production job at Toyota takes at least 18 hours. Once prospective employees complete a general knowledge exam and a test of their attitudes toward work, Toyota gives the top 30% the sort of scrutiny that American companies use only for hiring managers. First, the promising candidates go in groups of 12 to an "interpersonal skills assessment center," run by Kentucky State University, for a session of problem solving. The prospects are told, say, that a lawn mower manufacturer has production problems. The winners ask the right questions and work together to find solutions. Candidates also go through a manufacturing exercise, following instructions to assemble an array of plastic pipes and then improving on the method they were taught. That encourages anyone who dislikes the repetition of factory work to drop out. Less than 10% of the applicants survive to the final stages of a probing interview and a physical exam.

The resulting Toyota team members are a spirited elite who comfortably use such terms as *muda*, Japanese for waste, and *kaizen*, continuous improvement. Says Will Allen, 41, a training specialist who joined Toyota after spending ten years as a line supervisor at Volkswagen in New Stanton, Pennsylvania: "The main difference at Toyota is training. You are allowed to err. You don't see fear on people's faces."

Newcomers to manufacturing are equally upbeat. Jeanie Hughes, 35, a hairdresser for nine years, likens getting a job at Toyota to winning a lottery. "The odds were tremendous, but I would have swept floors," she says. Impressed with her eagerness and manual dexterity, Toyota sent Hughes to Japan for four weeks of training, which she says "gave me extra adrenaline to really push myself." Leading a Kentucky team that installs such small parts as outside mirrors and chrome trim, Hughes insists, is not radically different from the beauty shop. "You work fast with your hands, have an eye for quality, and three people can need something at once," she says. There's just one big difference: "I never got up at 4:30 a.m. before, but I love this job." Her hourly pay: $12.39, or 50% more than in the old job.

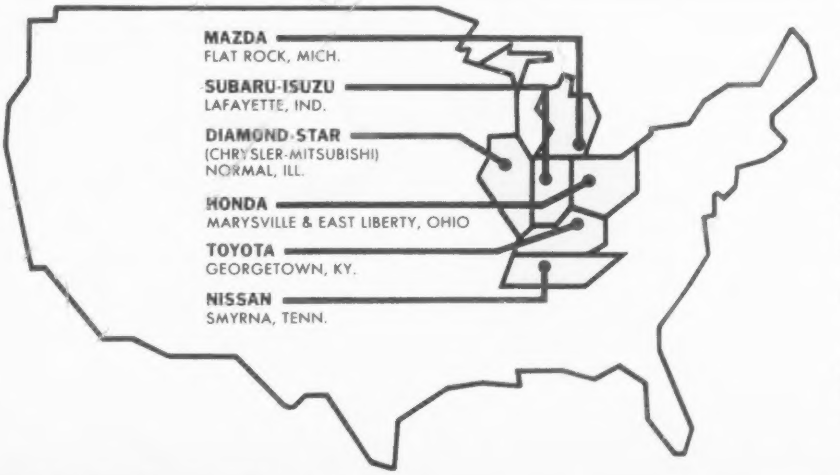
TOYOTA, OF COURSE, does a lot of cheerleading and morale building among its Kentucky employees. Team leaders, who get the same Japanese training tour as Jeanie Hughes, return as missionaries. Hearing them talk at debriefing sessions, one manager says, is "like going to church." To bolster harmony among American team members as well as with some 250 Japanese trainers in Kentucky, Toyota subsidizes a "personal touch program" of after-hours socializing.

The big test for Toyota's togetherness lies ahead. The Kentucky plant is training a second shift and has gradually stepped up the pace of production, doubling output since October to its targeted 400 cars a day on the first shift. Says Fujio Cho, executive vice president in charge of the plant: "I feel more problems will be likely from now on. We're not just sitting down being all happy about how things are going." Adds Heltman, the human resources manager: "The honeymoon eventually ends."

Maintaining the team spirit is already a struggle at Nissan after 5½ years in Tennessee. An intense organizing drive by the United Auto Workers is under way. Nissan's local executives, all Americans,

WHERE JAPAN'S AUTOMAKERS HAVE LANDED

Company	Employment Present	Planned	Production (Vehicles per year) Present	Planned
HONDA	5,500	7,000	360,000	510,000
NISSAN	3,100	N.A.	228,000	400,000
MAZDA	3,500	3,500	240,000	240,000
DIAMOND-STAR	1,275	2,900	Pilot production	240,000
SUBARU-ISUZU	–	3,200	(Under construction)	240,000
TOYOTA	1,700	3,500	100,000	200,000



Privacy? Toyota's Kentucky chief, Fujio Cho, must get along with his No. 2.

people." Toyota can afford to be choosy because the state picks up much of the bill.

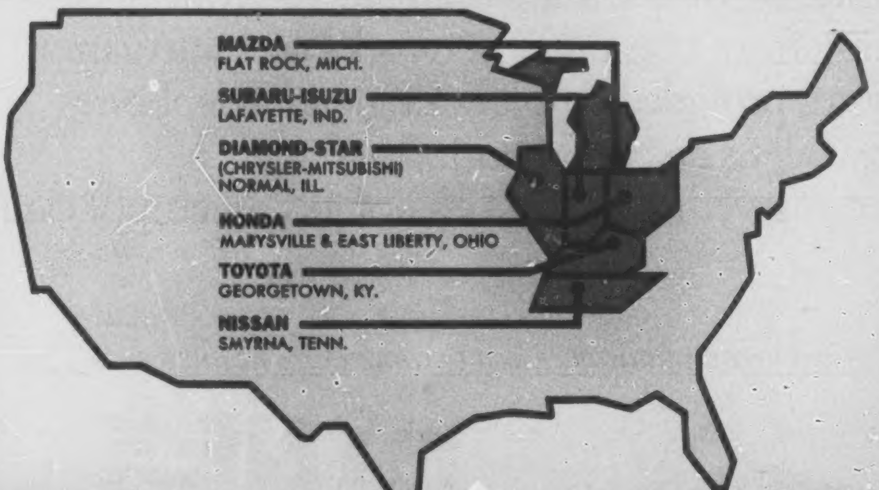
Landing a production job at Toyota takes at least 18 hours. Once prospective employees complete a general knowledge exam and a test of their attitudes toward work, Toyota gives the top 30% the sort of scrutiny that American companies use only for hiring managers. First, the promising candidates go in groups of 12 to an "interpersonal skills assessment center," run by Kentucky State University, for a session of problem solving. The prospects are told, say, that a lawn mower manufacturer has production problems. The winners ask the right questions and work together to find solutions. Candidates also go through a manufacturing exercise, following instructions to assemble an array of plastic pipes and then improving on the method they were taught. That encourages anyone who dislikes the repetition of factory work to drop out. Less than 10% of the applicants survive to the final stages of a probing interview and a physical exam.

The resulting Toyota team members are a spirited elite who comfortably use such terms as *muda*, Japanese for waste, and *kaizen*, continuous improvement. Says Will Allen, 41, a training specialist who joined Toyota after spending ten years as a line supervisor at Volkswagen in New Stanton, Pennsylvania: "The main difference at Toyota is training. You are allowed to err. You don't see fear on people's faces."

Newcomers to manufacturing are equally upbeat. Jeanie Hughes, 35, a hairdresser for nine years, likens getting a job at Toyota to winning a lottery. "The odds were tremendous, but I would have swept floors," she says. Impressed with her eagerness and manual dexterity, Toyota sent Hughes to Japan for four weeks of training, which she says "gave me extra adrenaline to really push myself." Leading a Kentucky team that installs such small parts as outside mirrors and chrome trim, Hughes insists, is not radically different from the beauty shop. "You work fast with your hands, have an eye for quality, and three people can need something at once," she says. There's just one big difference: "I never got up at 4:30 a.m. before, but I love this job." Her hourly pay: $12.39, or 50% more than in the old job.

WHERE JAPAN'S AUTOMAKERS HAVE LANDED

Company	Employment Present	Employment Planned	Production (Vehicles per year) Present	Production (Vehicles per year) Planned
HONDA	5,500	7,000	360,000	510,000
NISSAN	3,100	N.A.	228,000	400,000
MAZDA	3,500	3,500	240,000	240,000
DIAMOND-STAR	1,275	2,900	Pilot production	240,000
SUBARU-ISUZU	–	3,200	(Under construction)	240,000
TOYOTA	1,700	3,500	100,000	200,000



TOYOTA, OF COURSE, does a lot of cheerleading and morale building among its Kentucky employees. Team leaders, who get the same Japanese training tour as Jeanie Hughes, return as missionaries. Hearing them talk at debriefing sessions, one manager says, is "like going to church." To bolster harmony among American team members as well as with some 250 Japanese trainers in Kentucky, Toyota subsidizes a "personal touch program" of after-hours socializing.

The big test for Toyota's togetherness lies ahead. The Kentucky plant is training a second shift and has gradually stepped up the pace of production, doubling output since October to its targeted 400 cars a day on the first shift. Says Fujio Cho, executive vice president in charge of the plant: "I feel more problems will be likely from now on. We're not just sitting down being all happy about how things are going." Adds Heltman, the human resources manager: "The honeymoon eventually ends."

Maintaining the team spirit is already a struggle at Nissan after 5½ years in Tennessee. An intense organizing drive by the United Auto Workers is under way. Nissan's local executives, all Americans,

Mayor Richard C. Jones says that initially Mazda left Flat Rock, Michigan, flat.

share the antipathy of many Japanese transplants toward unions. Jerry Benefield, the Ford veteran who is president of the plant, says, "We've demonstrated that management and workers really can work together without fighting each other all the time." Nissan, for instance, boasts of having achieved the best attendance record in the U.S. auto industry without time clocks. It helps that Nissan employees work in teams of about 20, where absentees are easily noticed.

SOME NISSAN line employees complain that the production pace is practically burning them out. In cars per hour, Japanese lines don't necessarily move faster than Detroit's, but workers juggle more tasks, in addition to monitoring quality. "At the rate we work," says one assembler made available by the company for a private interview, "most people here wonder if they can do this job for 20 years." Capitalizing on such discontent, the UAW distributes leaflets and a video program in which individual Nissan employees contend that production speed is contributing to injuries and that favoritism influences promotion. Even Benefield acknowledges that "things aren't perfect." Still, employee turnover is a low 2% a year.

Nissan's experience shows that the Japanese production system is hardly magical and that it requires strenuous effort. Says Harvey Shaiken, a former auto worker who is now professor of work and technology at the University of California in San Diego: "There are two faces to the Japanese system. One is increased efficiency, better quality, and consulting with the workers. But the other is increased pressure, stress, and tightly strung manufacturing." Japanese plants, for instance, purposely do without cadres of relief workers: Team members are expected to take up the slack for employees who are ill.

Nissan's U.S. managers have adjusted some Japanese-style practices to placate American employees. Everyone is issued a uniform, but wearing it is strictly optional. Morning warm-up exercises, which are standard in most transplants, have faded away at Nissan. Says Benefield: "It's not an American tradition to go to work and do exercises, so they just stopped."

The only Japanese transplants that readily accept U.S. unions are those affiliated with American companies. Ford owns 25% of Mazda, which builds the Ford Probe as well as a similar model of its own in Flat Rock, Michigan. Japanese executives run the plant in a partnership of sorts with the UAW. The union has accepted a single job classification for all production employees and participates actively in management. Bill Judson, who serves in the Mazda personnel department with the title "team leader, union relations," is also president of the local UAW unit. If there's a problem in the plant, a team of union and management representatives tries to settle it on the spot. The only other Japanese auto plant with a U.S. affiliate, the new Diamond-Star facility built by Mitsubishi and Chrysler, has already agreed to recognize the UAW.

Honda has demonstrated that, with extraordinary effort by management, the Japanese production system can endure in America. Founded by an engineer, Honda believes the expert on any task is the person who does it every day on the production line. Most of the company's American managers start there, endlessly trained in everything from quality control leadership to dealing with stress. Japanese managers in Ohio effectively spread Honda's culture by example—constantly moving around the plant floor and pitching in to help when needed. In offices, no one drinks coffee while working at a desk because production workers are not allowed to do so on the line.

TO KEEP ENTHUSIASM at a high pitch, the company gives employees a share of its worldwide earnings. Honda also has a unique way of rewarding employees who make the best suggestions and improvements. Every two months, the company's two ranking executives in Ohio, both Japanese, take a 15-hour walking tour of the Marysville auto plant to thank the winners and hear their ideas. That night, the winners are honored with a banquet. The executives spend another two days repeating the ritual in Honda's nearby engine and motorcycle factories. Says Toshikata Amino, executive vice president: "If you really want teamwork and good communications, it's time consuming."

Americans have so thoroughly adopted Honda's egalitarian spirit that they even clash with Japanese associates who dare to pull rank. John L. Michel, 28, a Marysville native who joined Honda six years ago, recalls proposing a standardized form for monitoring quality control—and running into resistance from a Japanese department manager who had just created his own form. The manager asked, "Who are you? What's your title?" Michel replied, "I'm the person who wants to fix this, so my title doesn't matter." Nonplussed, the hierarchical Japanese let out a long sigh.

Michel, now in a department called asso-

UNION FREE
and
PROUD

At Nissan, the UAW has a hard sell in this good old boy.

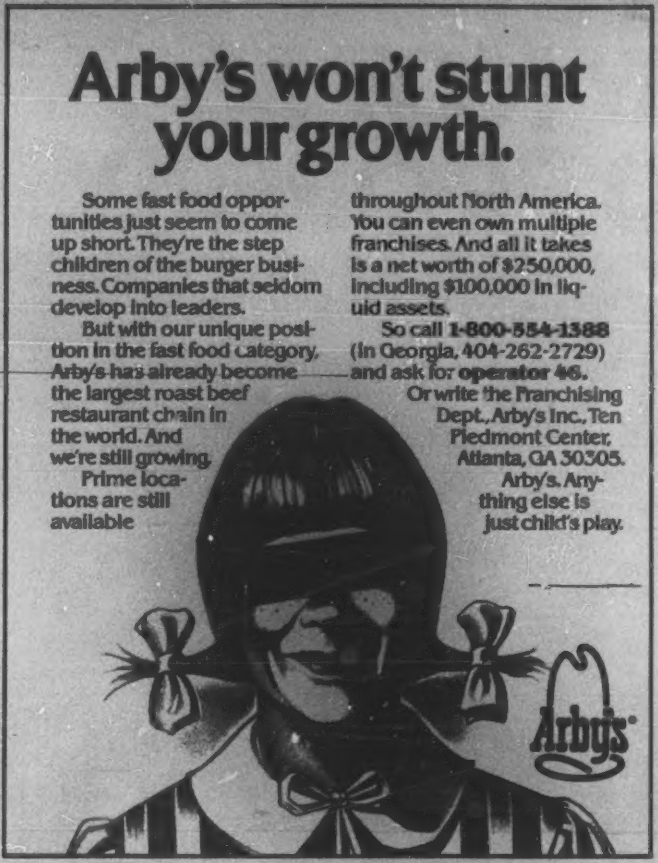
ciate development that trains and encourages workers, seems to personify the Honda spirit. He previously worked in a department that puts every car through quality tests, where he won an award for suggesting that the team rotate jobs every two hours instead of daily. The change not only relieved boredom, but gave everyone a fair share of the easier tasks. When Honda customers complained of dashboard rattles, a group of employees in Michel's department persuaded the company to build a much rougher test track.

Furthest along in "Japanizing" U.S. worker attitudes, Honda also leads in Americanizing the content of its cars. U.S. suppliers are preferred, and Honda helps bring them up to its standards. Says Garry Berryman, a Honda purchasing manager: "The supplier's attitude is more important than anything else." After Inland Steel improved the corrosion resistance of its steel to suit Honda, the company switched to using only American steel in Ohio.

DO NOT
ENTER

The automaker has also created new U.S. suppliers. About three years ago Honda asked Kevin Kern, who ran a business with his father testing lawn seed near the Japanese auto plant, to take on subassembly work. He set up a little workshop that has grown into Kern & Kern, one of Honda's most efficient suppliers. Its 20 employees mount hi-fi speakers into plastic moldings and deliver them to Honda three times daily.

So far, the experience in the U.S. must be counted a success. The carmakers have kept the kind of efficiency they enjoy at home, and no one appreciates their competitive edge more than the workers of Japan's Auto Alley. Michel of Honda takes colleagues on plant tours of competitors. On the bus back from a Big Three facility, he says, "Some of our associates wondered how they stay in business with guys sitting around on the line watching TV sets. That never happens here." The transplants do have their downside, including the wrenching social changes and all those giveaways by taxpayers. But nobody ever said globalizaton would be easy for America. ■


Arby's won't stunt your growth.

Some fast food opportunities just seem to come up short. They're the step children of the burger business. Companies that seldom develop into leaders.

But with our unique position in the fast food category, Arby's has already become the largest roast beef restaurant chain in the world. And we're still growing.

Prime locations are still available throughout North America. You can even own multiple franchises. And all it takes is a net worth of $250,000, including $100,000 in liquid assets.

So call **1-800-554-1388** (in Georgia, 404-262-2729) and ask for **operator 46.**

Or write the Franchising Dept., Arby's Inc., Ten Piedmont Center, Atlanta, GA 30305.

Arby's. Anything else is just child's play.

Arby's®

FRANCHISE OPPORTUNITY FOR

WOOZ™

AMERICA'S LARGEST
LABYRINTH
AMUSEMENT PARK

COMPLEX INCLUDES:
• 3 MAZES • RESTAURANT • GIFT SHOP
• VIDEO ARCADE • FUN HOUSE

NATIONAL MARKETING CAMPAIGN
EXCELLENT THROUGHPUT CAPABILITIES
EXTENSIVE TRAINING AND OPERATIONAL SUPPORT

FOR DETAILS CONTACT:
PAULETTE WILLIAMS
SUN CREATIVE SYSTEM U.S.A., INC.
190 SOUTH ORCHARD STREET (B230)
VACAVILLE, CA 95688
(707) 446-5588

© Sun Creative System 1988

HE BEST AND WORST

If memories of the crash drove you into hiding last year, your decision was understandable—but costly. ■ *by Joshua Mendes*

WE HOPE YOU didn't miss out. The Dow Jones industrial average and the broader Standard & Poor's 500-stock index nearly tripled their 1987 performances with total returns of about 17%. That's a handsome gain compared with what you could have got with the best of the "safer" investments: 9% from long-term Treasury bonds.

And ah, if you picked the *right* stocks, as shown below in FORTUNE's annual rankings of the year's biggest winners and losers. Compiled jointly by Wright Investors' Service and Wilshire Associates, the lists bring together shares traded on the New York Stock Exchange, the American Stock Exchange, and the over-the-counter market. Rankings are based on total return to investors, expressed as price appreciation plus reinvested dividends. To prevent overrepresentation of the most volatile OTC stocks, the lists include only companies that started the year at $5 or more per share, adjusted for splits. Partnership units and American Depositary Receipts of foreign companies are excluded.

As you might expect, many companies making money on the medical cost explosion did well. Others capitalized on the industrial revival. Surprisingly, even some S&Ls paid off richly. Missing are lots of stocks that soared before other

THE 100 BEST STOCKS

		STOCK PRICE 12/31		DIVIDENDS PER SHARE	TOTAL RETURN TO INVESTORS
		1987	1988		
1	**Henley Manufacturing** (Hampton, N.H.)	$20.000	$89.375	–	347%
2	**C-COR Electronics** (State College, Pa.)	$5.750	$22.500	–	291%
3	**Jan Bell Marketing** (Fort Lauderdale, Fla.)	$5.669	$20.000	–	253%
4	**SciMed Life Systems** (Minneapolis)	$8.500	$28.250	–	232%
5	**General Magnaplate** (Linden, N.J.)	$6.875	$21.875	$0.10	221%
6	**Athlone Industries** (Parsippany, N.J.)	$11.500	$32.000	$1.60	206%
7	**Super Rite Foods** (Harrisburg, Pa.)	$7.500	$22.500	$0.23	205%
8	**Borman's** (Detroit)	$8.750	$26.375	$0.06	204%
9	**University Savings Bank** (Seattle)	$8.625	$24.500	$0.40	190%
10	**Salant** (New York City)	$6.750	$19.375	–	187%
11	**Peoples Federal Savings Bank** (Monroe, Mich.)	$6.625	$18.25	$0.25	181%
12	**Baldwin Technology** (Stamford, Conn.)	$5.000	$13.625	$0.13	177%
13	**Lincoln Bancorp** (Encino, Calif.)	$5.712	$15.625	–	174%
14	**International Game Technology** (Reno, Nev.)	$8.375	$22.625	–	170%
15	**Budget Rent a Car** (Chicago)	$11.000	$29.125	–	165%
16	**Salem** (Pittsburgh)	$5.250	$13.875	–	164%
17	**Chicago Pacific** (Chicago)	$20.000	$52.000	$0.25	162%
18	**Ausimont N.V.** (Waltham, Mass.)	$13.250	$34.000	$0.60	161%
19	**Microcom** (Norwood, Mass.)	$11.250	$29.000	–	158%
20	**Thrifty Rent-A-Car System** (Tulsa)	$7.003	$18.000	–	157%
21	**BankAmerica** (San Francisco)	$6.875	$17.625	–	156%
22	**Holly** (Dallas)	$7.687	$19.500	$0.06	155%
23	**Nichols-Homeshield** (Aurora, Ill.)	$6.375	$16.250	–	155%
24	**Occupational–Urgent Care Health** (Sacramento, Calif.)	$5.625	$14.250	–	153%
25	**Union** (South Norwalk, Conn.)	$5.000	$12.625	–	153%

*Includes extraordinary onetime payout of cash, stock, or debt securities.

ILLUSTRATIONS BY TERRY ALLEN

STOCKS OF 1988

companies swallowed them (see next story).

OTC stocks predominated on both lists as usual. First prize went to Henley Manufacturing, a maker of commodity chemicals created as part of the Henley Group, 35 faltering businesses that Allied-Signal spun off in 1986. In turn the group, headed by former Allied executive Michael Dingman, spun off Henley Manufacturing to shareholders in 1987 at $18.25 a share. When the price did not rise much, Dingman began to accumulate shares for himself. In late December he and a partner made a tender offer for the remainder—at $90 a share.

Taking second place was another OTC company, C-COR Electronics, which produces gear for cable television. Cable operators have been on an equipment-buying spree. Other top-ranked OTC winners included catheter maker SciMed Life Systems, which won a favorable ruling in a patent-infringement lawsuit filed by Eli Lilly, and General Magnaplate, which turns out proprietary coatings that protect metals from corrosion.

THE AMERICAN exchange produced this year's bronze medal winner, Jan Bell Marketing, a jewelry distributor helped by the rapid growth of wholesale membership clubs. Other notable Amex winners were Baldwin Technology, the world's leading producer of printing equipment, and Salem Corp., a heavy-machinery outfit that rode the recovery in the metals industries.

The New York exchange's top gainer was also a smokestack success—Athlone Industries, a specialty steelmaker. Another Big Board champ, Salant, proved that you should never count a company out too soon. Since emerging from bankruptcy in 1987, the manufacturer of jeans and other apparel has acquired another clothing company and tripled its sales.

Winners turned to losers too. Informix, a database software company, placed 15th last year on the winner's list, but was the 32nd-biggest loser this year when late product introductions ravaged profits. Also among the fallen stars was Genentech, the biotech whiz, whose sales stumbled. The biggest loser was Coated Sales, once a high-flying maker of specialty fabrics for parachutes and other survival gear. Not even parachutes could break this company's fall when auditors discovered it had overstated its assets by millions of dollars. It has filed for bankruptcy, most of its top executives have resigned, and the Justice Department is investigating. Moral: Yesterday's right stock may be wrong in 1989.

REPORTER ASSOCIATE *Constance A. Gustke*

THE 100 BEST STOCKS

		STOCK PRICE 12/31		DIVIDENDS PER SHARE	TOTAL RETURN TO INVESTORS
		1987	1988		
26	**Cellular Products** (Buffalo)	$6.250	$15.750	–	152%
27	**Phoenix Medical Technology** (Andrews, S.C.)	$6.750	$17.000	–	152%
28	**Action Auto Rental** (Solon, Ohio)	$6.667	$16.750	–	151%
29	**Stewart & Stevenson Services** (Houston)	$11.339	$28.250	$0.05	150%
30	**Interco** (St. Louis)	$32.250	$3.625	$67.01*	149%
25	**Alliance Financial** (Dearborn, Mich.)	$17.500	$41.500	$1.00	148%
22	**Baltek** (Northvale, N.J.)	$5.875	$14.375	$0.10	148%
33	**Maxxam** (Los Angeles)	$9.875	$24.375	–	147%
34	**Big Bear** (Columbus, Ohio)	$15.442	$38.000	–	146%
35	**Associated Communications** (Class B) (Pittsburgh)	$14.674	$36.000	–	145%
36	**Elmwood Federal Savings Bank** (Media, Pa.)	$5.000	$12.125	–	143%
37	**Software Publishing** (Mountain View, Calif.)	$8.125	$19.625	–	142%
38	**MCI Communications** (Washington, D.C.)	$9.375	$22.625	–	141%
39	**Pennwalt** (Philadelphia)	$44.750	$103.125	$2.40	139%
40	**Mocon/Modern Controls** (Brooklyn Center, Minn.)	$5.750	$13.500	$0.15	138%
41	**InterTan** (Fort Worth)	$14.875	$35.250	–	137%
42	**Windmere** (Miami Lakes, Fla.)	$7.503	$17.750	–	137%
43	**Artra Group** (Northfield, Ill.)	$12.375	$29.250	–	136%
44	**Interactive Technologies** (St. Paul)	$7.250	$17.125	–	136%
45	**R.P. Scherer** (Troy, Mich.)	$12.500	$28.750	$0.37	134%
46	**Lamson & Sessions** (Beachwood, Ohio)	$5.500	$12.875	–	134%
47	**Century Telephone Enterprises** (Monroe, La.)	$13.840	$31.500	$0.59	134%
48	**Centel Cable Television** (Oak Brook, Ill.)	$16.750	$39.000	$0.03	133%
49	**Sound Warehouse** (Dallas)	$9.125	$21.250	–	133%
50	**Badger Paper Mills** (Peshtigo, Wis.)	$7.875	$17.750	$0.49	133%

□ NEW YORK STOCK EXCHANGE

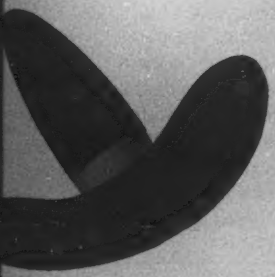
▨ AMERICAN STOCK EXCHANGE

■ OVER THE COUNTER

THE 100 BEST STOCKS

		STOCK PRICE 12/31		DIVIDENDS PER SHARE	TOTAL RETURN TO INVESTORS
		1987	1988		
51	**Collagen** (Palo Alto, Calif.)	$5.750	$13.250	–	130%
52	**Valmont Industries** (Valley, Neb.)	$10.000	$22.500	$0.31	130%
53	**BGS Systems** (Waltham, Mass.)	$5.500	$9.750	$2.20*	128%
54	**JLG Industries** (McConnellsburg, Pa.)	$6.750	$15.250	$0.11	128%
55	**Applied Power** (Butler, Wis.)	$16.000	$36.250	$0.20	128%
56	**Cambridge BioScience** (Worcester, Mass.)	$6.250	$14.250	–	128%
57	**Nelcap Holdings** (Vancouver, B.C.)	$11.375	$25.875	–	127%
58	**Helen of Troy** (El Paso, Texas)	$6.875	$15.625	–	127%
59	**Gundle Environmental Systems** (Houston)	$12.700	$28.750	–	126%
60	**Outlet Communications** (Providence)	$10.500	$23.750	–	126%
61	**Virco Manufacturing** (Los Angeles)	$5.000	$11.250	$0.04	126%
62	**Gradco Systems** (Irvine, Calif.)	$5.875	$13.250	–	126%
63	**Diversified Investment Group** (Philadelphia)	$6.500	$14.625	–	125%
64	**First Federal S&L** (Kalamazoo, Mich.)	$13.000	$28.625	$0.37	124%
65	**Kroger** (Cincinnati)	$24.750	$8.875	$49.45*	124%
66	**CRS Sirrine** (Houston)	$12.000	$26.500	$0.24	124%
67	**Advanced Marketing Services** (San Diego)	$7.500	$16.750	–	123%
68	**Whittaker** (Los Angeles)	$24.000	$51.750	$1.00	123%
69	**Medex** (Hilliard, Ohio)	$5.950	$13.125	$0.09	123%
70	**Cascade** (Portland, Ore.)	$10.250	$22.000	$0.60	123%
71	**Rockaway** (Parsippany, N.J.)	$7.000	$15.000	$0.35	122%
72	**Supradur Companies** (Rye, N.Y.)	$5.875	$13.000	–	121%
73	**Quanex** (Houston)	$6.125	$13.375	$0.08	120%
74	**Costar** (Cambridge, Mass.)	$6.834	$15.000	–	119%
75	**Telephone & Data Systems** (Chicago)	$12.623	$27.375	$0.20	119%
76	**Durr-Fillauer Medical** (Montgomery, Ala.)	$8.500	$18.375	$0.13	119%
77	**Burndy** (Norwalk, Conn.)	$11.875	$25.875	$0.05	118%
78	**Computer Data Systems** (Rockville, Md.)	$8.500	$18.375	$0.12	118%
79	**Superior Industries International** (Van Nuys, Calif.)	$9.203	$19.750	$0.24	118%
80	**C&R Clothiers** (Culver City, Calif.)	$11.000	$24.000	–	118%
81	**Laclede Steel** (St. Louis)	$10.171	$21.750	$0.47	118%
82	**Component Technology** (Dayton)	$7.000	$15.250	–	118%
83	**Puerto Rican Cement** (San Juan)	$23.625	$50.250	$0.75	118%
84	**Cleveland-Cliffs** (Cleveland)	$14.875	$26.625	$4.37*	117%
85	**Fidelity Federal S&L** (Marion, Ind.)	$7.750	$16.750	–	116%
86	**Burritt Interfinancial** (New Britain, Conn.)	$8.797	$19.000	–	116%
87	**Midsouth** (Jackson, Miss.)	$6.327	$13.625	–	115%
88	**DOC Optics** (Southfield, Mich.)	$5.000	$10.750	–	115%
89	**Eaton Financial** (Framingham, Mass.)	$6.750	$14.500	–	115%
90	**Frozen Food Express** (Dallas)	$5.125	$10.750	$0.19	115%
91	**McIntyre Mines** (Toronto)	$33.000	$58.500	$11.96*	114%
92	**Holly Farms** (Memphis)	$27.000	$55.625	$1.32	113%
93	**McClain Industries** (Sterling Heights, Mich.)	$6.562	$14.000	–	113%
94	**Osmonics** (Minnetonka, Minn.)	$7.500	$16.000	–	113%
95	**Fedders** (Peapack, N.J.)	$6.125	$12.625	$0.30	113%
96	**PacifiCare Health Systems** (Cypress, Calif.)	$5.750	$12.250	–	113%
97	**Woodstream** (Lititz, Pa.)	$8.000	$16.625	$0.28	113%
98	**Agouron Pharmaceuticals** (La Jolla, Calif.)	$8.000	$17.000	–	113%
99	**Nichols Institute** (San Juan Capistrano, Calif.)	$5.831	$12.375	–	112%
100	**Programming & Systems** (New York City)	$8.250	$17.500	–	112%

*Includes extraordinary onetime payout of cash, stock, or debt securities.



□ NEW YORK STOCK EXCHANGE
▨ AMERICAN STOCK EXCHANGE
■ OVER THE COUNTER

THE 50 WORST STOCKS

		STOCK PRICE 12/31			
		1987	1988		
1	**Coated Sales** (Laurence Harbor, N.J.)	$6.750	$0.297	–	–96%
2	**First Service Bank for Savings** (Leominster, Mass.)	$8.125	$0.688	–	–92%
3	**National Business Systems** (Mississauga, Ontario)	$10.250	$0.875	–	–91%
4	**North American Ventures** (East Hartford, Conn.)	$5.125	$0.594	–	–88%
5	**Metropolitan Financial S&L** (Dallas)	$6.000	$0.750	–	–88%
6	**Alliance Bancorporation** (Anchorage, Alaska)	$6.750	$0.875	–	–87%
7	**Sphinx Mining** (Fort Smith, Ark.)	$5.188	$0.719	–	–86%
8	**Diversified Foods** (Portland, Maine)	$7.500	$1.250	–	–83%
9	**Odyssey Entertainment** (Los Angeles)	$9.375	$1.625	–	–83%
10	**American Carriers** (Overland Park, Kans.)	$5.625	$1.000	–	–82%
11	**Tucker Holding** (Jacksonville, Fla.)	$6.125	$1.250	–	–80%
12	**Transducer Systems** (Kulpsville, Pa.)	$5.750	$1.188	–	–79%
13	**McCormick Capital** (Chicago)	$5.750	$1.250	–	–78%
14	**Sonora Gold** (Vancouver)	$6.000	$1.438	–	–76%
15	**Kappa Networks** (Rahway, N.J.)	$6.000	$1.500	–	–75%
16	**Western S&L** (Phoenix)	$8.687	$2.375	–	-73%
17	**Readel Industries** (Newport Beach, Calif.)	$5.250	$1.438	–	–73%
18	**Damon Creations** (New York City)	$5.875	$1.625	–	–72%
19	**Telesphere Int'l** (Oakbrook Terrace, Ill.)	$5.500	$1.625	–	–70%
20	**[illegible]** (Seattle)	$6.000	$1.813	–	–70%
21	**Leadville** (Lakewood, Colo.)	$9.500	$2.875	–	–70%
22	**Alpha 1 Biomedicals** (Washington, D.C.)	$8.500	$2.625	–	–69%
23	**Micropolis** (Chatsworth, Calif.)	$23.250	$7.375	–	–68%
24	**Great American** (Baton Rouge, La.)	$5.000	$1.625	–	–68%
25	**Check Technology** (St. Paul)	$5.750	$1.875	–	–67%
26	**ABQ Bank** (Albuquerque, N.M.)	$11.500	$3.750	–	–67%
27	**Thortec International** (San Mateo, Calif.)	$11.375	$3.750	–	–67%
28	**Wyse Technology** (San Jose, Calif.)	$21.875	$7.250	–	–67%
29	**Circle Express** (Indianapolis)	$5.250	$1.750	–	–67%
30	**Datamag** (Scottsdale, Ariz.)	$9.000	$3.000	–	–67%
31	**EMC** (Hopkinton, Mass.)	$15.750	$5.375	–	–66%
32	**Informix** (Menlo Park, Calif.)	$24.250	$8.375	–	–65%
33	**Continental Information Systems** (Syracuse, N.Y.)	$6.125	$2.125	–	–65%
34	**Regina** (Rahway, N.J.)	$15.000	$5.250	–	–65%
35	**Sooner Federal Savings** (Tulsa)	$20.000	$7.000	–	–65%
36	**E&B Marine** (Edison, N.J.)	$6.250	$2.250	–	–64%
37	**Elcotel** (Sarasota, Fla.)	$7.250	$2.750	–	–62%
38	**Genentech** (San Francisco)	$42.000	$16.000	–	–62%
39	**Hauserman** (Cleveland)	$12.000	$4.500	$0.25	–62%
40	**Computer & Communications Technology** (San Diego)	$6.500	$2.500	–	–62%
41	**Oelcom Technologies** (Rockaway, N.J.)	$5.750	$2.250	–	–61%
42	**Inspeech** (Norristown, Pa.)	$13.000	$5.125	–	–61%
43	**Hana Biologics** (Alameda, Calif.)	$11.000	$4.375	–	–60%
44	**Joule** (Edison, N.J.)	$6.875	$2.750	–	–60%
45	**Flanigan's Enterprises** (Fort Lauderdale, Fla.)	$5.125	$2.000	$0.10	–60%
46	**Raytech** (Trumbull, Conn.)	$7.125	$2.875	$0.05	–59%
47	**American Passage Marketing** (Seattle)	$7.375	$3.000	–	–59%
48	**Diceon Electrics** (Irvine, Calif.)	$30.500	$12.500	–	–59%
49	**ElectroSound Group** (Hauppauge, N.Y.)	$7.125	$3.000	–	–58%
50	**Manufactured Homes** (Winston-Salem, N.C.)	$14.750	$6.250	–	–58%

DEALS OF THE YEAR

Quickly shaking off the gloom of the stock market crash, mergers—and fees—blazed new records in 1988. And RJR Nabisco has yet to be wrapped up.

■ *by Ronald Henkoff*

IT WAS A BRAWLING food fight of a year. Wall Street's dealmakers, only briefly unsettled by the October 1987 stock market crash, plunged back into the arena with all the zest and decorum of frat house denizens at dinnertime. By the time the fracas was over, a larderful of household names—including Kraft, Bloomingdale's, *TV Guide*, Firestone, and CBS Records—had changed hands.

After a hesitant start, 1988 was a record breaker. The acquisitions, restructurings, public offerings, and stock buybacks on FORTUNE's annual list of the 50 largest deals add up to $111.8 billion, easily surpassing the previous mark of $94.6 billion set in 1985. As for the dealmakers, public documents and other sources show that they took in at least $687 million in advisory fees—also a record—not counting commissions on related financing. The 1988 tally does not even include the biggest deal in history, the $25 billion leveraged buyout of RJR Nabisco by Kohlberg Kravis Roberts, which won't be completed until early 1989.

Despite all the fuss surrounding Nabisco and other LBOs, most of the major deals of 1988 were old-fashioned mergers and acquisitions, masterminded not by freebooting raiders bent on asset sales but by American and foreign companies eyeing expansion. That's not to say that the transactions were always amicable. "We're seeing the return of the corporate hostile offer," says James Maher, co-head of investment banking at First Boston. The year's No. 1 transaction sprang from Philip Morris's unsolicited bid for Kraft, which the cheesemaker at first rejected but accepted when the price was raised. The $12.9 billion purchase, which came just three years after Philip Morris swallowed General Foods, now stands as the biggest non-oil acquisition ever.

The upsurge of mergers and acquisitions activity took many Wall Street pros by surprise. "Everybody after the crash was pessimistic," says Eric Gleacher, head of M&A at Morgan Stanley. "I don't recall one person saying 1988 would be a boom year." Several developments early in the year wrong-footed the prognosticators. The junk bond market rebounded strongly from a case of paralysis after Black Monday. That, combined with deflated stock prices, lured many corporate buyers from the sidelines.

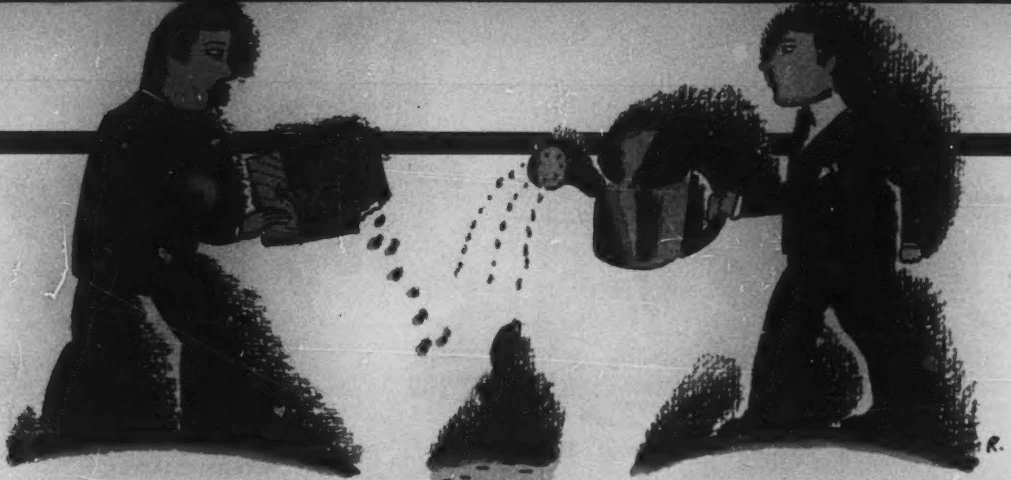
Foreign companies had a special incentive to buy American—a cheaper dollar. The first big gambit of the year was the hostile bid by Hoffmann-La Roche, the Swiss pharmaceutical giant, for Sterling Drug. Hoffmann lost out when Sterling fell into the arms of a white knight, diversifying Eastman Kodak (deal No. 4). Newly aggressive Japanese raiders were more successful. In an unprecedented tricontinental takeover battle, Bridgestone beat out Italy's Pirelli to win control of Firestone Tire & Rubber, chalking up the largest-ever American acquisition by a Japanese company (No. 10). Sony captured a broad swath of American pop culture with its purchase of CBS Records (No. 17). In the year's biggest foreign deal, Canadian developer Robert Campeau acquired Federated Department Stores (No. 2), but sold off large chunks of it to May Department Stores (No. 26) and R.H. Macy (No. 49) to pay down his debt.

The British, meanwhile, had another banner year in the colonies. Tobacco conglomerate BAT Industries acquired Farmers Group, the California insurer, after a prolonged struggle (No. 3). Robert Maxwell, the pugnacious press potentate, finally managed to land an American publisher with his purchase of Macmillan (No. 14). Still pending at year-end was Grand Metropolitan's $5.7 billion takeover of Pillsbury.

Some of the year's biggest would-be takeovers were thwarted, but only after the target companies sandbagged themselves with debt. "We're increasingly seeing the utilization of leverage for defense as well as offense," says Geoffrey Boisi, head of investment banking at Goldman Sachs. Kroger, the supermarket chain, warded off Kohlberg Kravis Roberts and the Haft family by dishing out a special dividend and a debenture to common stockholders (No. 6). Santa Fe Southern Pacific, a railroad and real estate concern, used similar tactics to stop the Henley Group (No. 5).

LEVERAGED buyouts, of course, dominated the news, if not the charts, as the year drew to a close. With the Nabisco deal consigned to next year's list, only one LBO made the top ten in 1988: the comparatively modest, $3.6 billion buyout of papermaker Fort Howard of Green Bay, Wisconsin (No. 7). Altogether, only six of the year's top 50 deals were LBOs, the same number as in 1987. Still, the enormousness of the Nabisco deal guarantees that investors, the press, and politicians will keep a close watch on buyouts this year. "The major question for 1989 is not economic; it's really political," says Gleacher of Morgan Stanley. But barring any precipitate action by Congress, such as limiting the deductibility of interest payments, 1989 looks to be another strong, lucrative—and rowdy—year for dealmakers.

ILLUSTRATIONS BY MARC ROSENTHAL



RANK		VALUE (000) % of book value	TRANSACTION	FINANCIAL INTERMEDIARIES (Client)	FEE (000)	FEE as % of deal
1	**PHILIP MORRIS** (tobacco, food) acquires **KRAFT** (food)	$12,891,000 609%	Acquisition for cash, December 7	WASSERSTEIN PERELLA (Philip Morris)	$12,000	.09%
				GOLDMAN SACHS LAZARD FRÈRES (Kraft)	$30,000 $3,500	.23% .03%
2	**CAMPEAU** (shopping centers) acquires **FEDERATED DEPARTMENT STORES**	$6,520,000 264%	Acquisition for cash, July 29	FIRST BOSTON WASSERSTEIN PERELLA (Campeau)	$18,900 $10,000	.29% .15%
				GOLDMAN SACHS HELLMAN & FRIEDMAN SHEARSON LEHMAN HUTTON (Federated Department Stores)	$17,875 $16,225 $19,800	.27% .25% .30%
3	**BAT INDUSTRIES** (tobacco, paper) acquires **FARMERS GROUP** (insurance)	$5,148,186 308%	Acquisition for cash, December 16	CONNING & CO. GOLDMAN SACHS SHEARSON LEHMAN HUTTON (BAT Industries)	$4,125 $12,375 $2,000	.08% .24% .04%
				FIRST BOSTON MORGAN STANLEY (Farmers Group)	$10,782 $9,782	.21% .19%
4	**EASTMAN KODAK** (photographic supplies) acquires **STERLING DRUG**	$5,093,072 504%	Acquisition for cash, February 29	SHEARSON LEHMAN HUTTON (Eastman Kodak)	$8,000	.16%
				MORGAN STANLEY (Sterling Drug)	$28,500	.56%
5	**SANTA FE SOUTHERN PACIFIC** (railroad, energy, real estate) pays special dividend	$4,701,000 90%	Dividend of $25 in cash and $5 face amount of a 16% senior subordinated debenture to holders of common stock, as part of a $7.3 billion leveraged recapitalization to fend off a takeover bid by the Henley Group, March 11	GOLDMAN SACHS SALOMON BROTHERS	$12,500 $12,500	.27% .27%
6	**KROGER** (supermarkets, drugstores) pays special dividend	$3,916,269 299%	Dividend of $40 cash and an $8 junior subordinate discount debenture to holders of common stock as part of a $5.3 billion leveraged recapitalization to fend off takeover bids from Kohlberg Kravis Roberts and the Haft family, December 2	GOLDMAN SACHS	$25,000	.64%
7	**F.H. ACQUISITION**[1] acquires **FORT HOWARD** (paper products)	$3,581,000 261%	Leveraged buyout for cash, October 24	MORGAN STANLEY (F.H. Acquisition)	$40,000	1.12%
				FIRST BOSTON (Fort Howard)	$3,600	.10%
8	**NEWS CORP.** (publishing) acquires **TRIANGLE PUBLICATIONS**	$3,000,000 N.A.	Acquisition for cash, November 1	ALLEN & CO. (News Corp.)	N.A.	—
				VERONIS SUHLER (Triangle)	N.A.	—

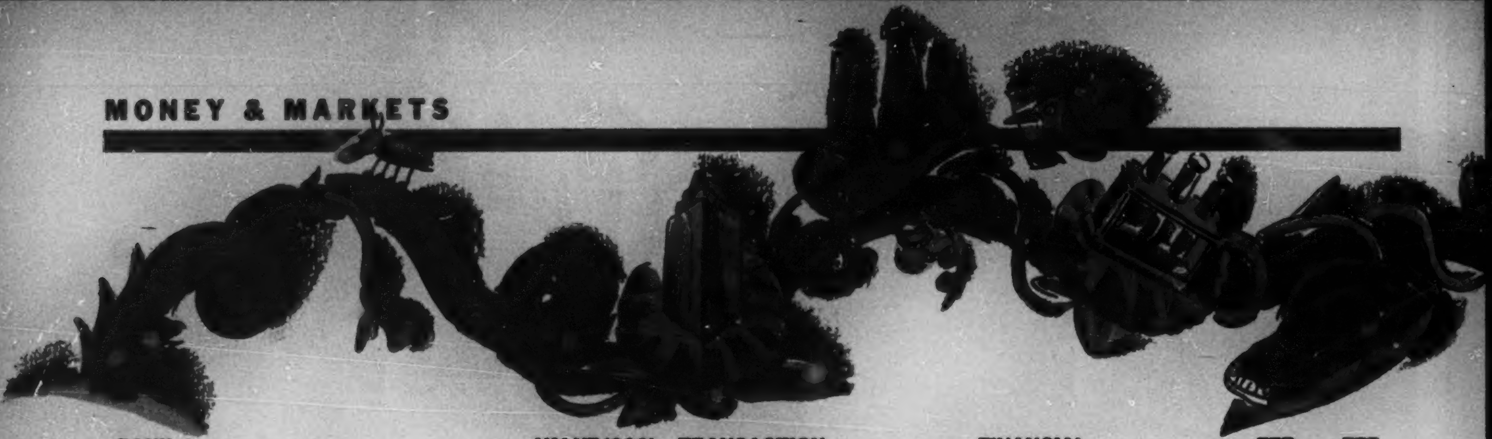
Mergers and acquisitions

Securities offerings and buybacks

N.A. Not available.

[1] Group led by Morgan Stanley and Fort Howard senior management.

THIS LIST WAS COMPILED BY REPORTER ASSOCIATE KATHLEEN CARROLL SMYTH.



RANK		VALUE (000) % of book value	TRANSACTION	FINANCIAL INTERMEDIARIES (Client)	FEE (000)	FEE as % of deal
9	**UAL[2] (transportation) repurchases common stock**	$2,840,000 157%	Cash tender offer for 35.5 million shares (62%) as part of a restructuring plan, March 15	FIRST BOSTON	N.A.	—
10	**BRIDGESTONE (tires) acquires FIRESTONE TIRE & RUBBER**	$2,621,483 235%	Acquisition for cash, May 5	LAZARD FRÈRES (Bridgestone)	$5,000	.19%
				BLACKSTONE GROUP GOLDMAN SACHS (Firestone)	$10,400 $16,335	.40% .62%
11	**CHEVRON (petroleum) acquires Gulf of Mexico oil and gas reserves from TENNECO**	$2,600,000 N.A.	Acquisition for cash as part of Tenneco's $7.3 billion auction of oil and gas assets, November 18	MORGAN STANLEY (Tenneco)	N.A.	—
12	**AMERICAN STORES (supermarkets, drugstores) acquires LUCKY STORES (supermarkets)**	$2,585,632 790%	Acquisition for cash, June 9	SHEARSON LEHMAN HUTTON (American Stores)	$7,000	.27%
				GOLDMAN SACHS SALOMON BROTHERS (Lucky Stores)	$11,635 $10,342	.45% .40%
13	**USG (building materials) pays special dividend**	$2,574,266 390%	Dividend of $37 in cash, $5 face amount of a 16% junior debenture, and one share of common stock worth $7.50 as part of a $3.1 billion leveraged recapitalization to fend off a takeover bid by Desert Partners, July 13	GOLDMAN SACHS SALOMON BROTHERS	$6,500 $6,500	.25% .25%
14	**MAXWELL COMMUNICATION (publishing) acquires MACMILLAN (publishing)**	$2,557,775 539%	Acquisition for cash, December 16	ROTHSCHILD INC. SAMUEL MONTAGU (Maxwell)	$12,000 $2,278	.47% .09%
				FIRST BOSTON LAZARD FRÈRES WASSERSTEIN PERELLA (Macmillan)	$7,000 $4,000 $5,000	.27% .16% .20%
15	**ASI HOLDING[3] acquires AMERICAN STANDARD (building, transportation products)**	$2,459,000 282%	Leveraged buyout for cash, June 29	KELSO & CO. FIRST BOSTON (ASI Holding)	$25,000 $12,500	1.02% .51%
				GOLDMAN SACHS (American Standard)	$12,360	.50%
16	**GENERAL ELECTRIC (electronics) acquires chemical business from BORG-WARNER (automotive parts, chemicals)**	$2,310,000 N.A.	Acquisition for cash, September 19	KIDDER PEABODY (General Electric)	N.A.	—
				MERRILL LYNCH CAPITAL MARKETS (Borg-Warner)	N.A.	—
17	**SONY (electronics) acquires CBS RECORDS from CBS (broadcasting)**	$2,000,000 N.A.	Acquisition for cash, January 5	BLACKSTONE GROUP (Sony)	N.A.	—
17	**MFS INTERMEDIATE INCOME TRUST† sells common stock**	$2,000,000	Initial public offering of 200 million shares, March 10	WHEAT FIRST SECURITIES* KIDDER PEABODY SMITH BARNEY HARRIS UPHAM	$139,000	6.95%

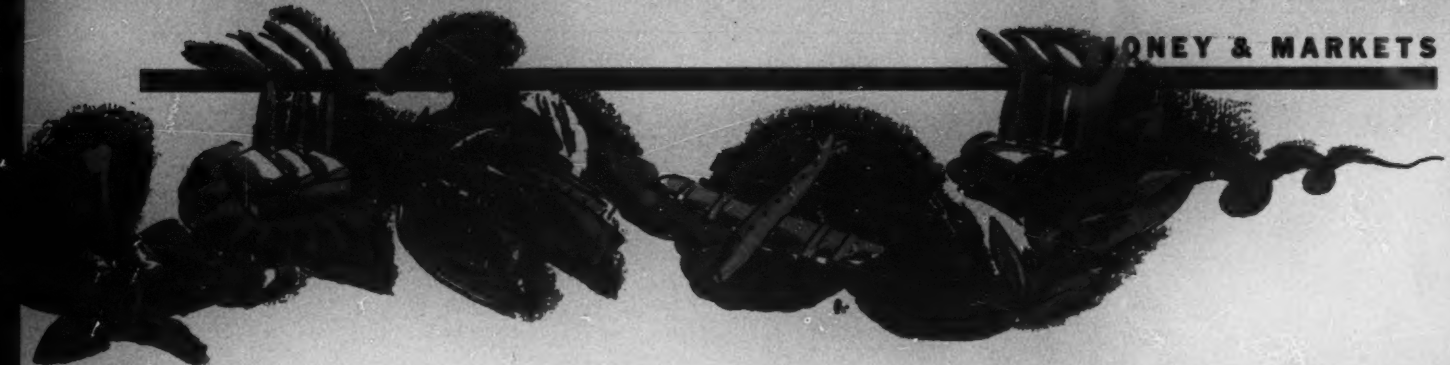
Mergers and acquisitions

Securities offerings and buybacks

N.A. Not available.
† Closed-end investment company.
* Lead manager.

[2] Formerly Allegis Corp.

[3] Group led by Kelso & Co., American Standard senior management, and American Standard employees in employee stock ownership plan.



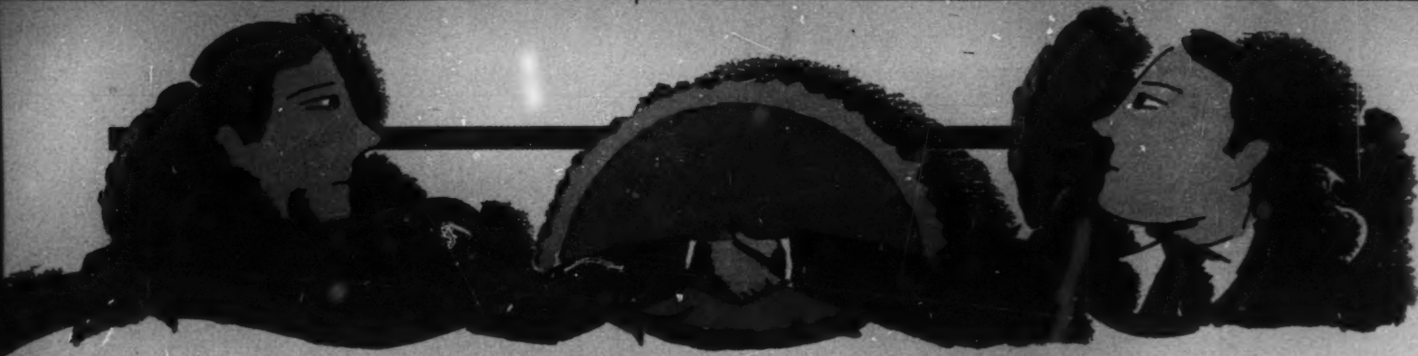
RANK		VALUE (000) % of book value	TRANSACTION	FINANCIAL INTERMEDIARIES (Client)	FEE (000)	FEE as % of deal
19	**DURACELL HOLDINGS**[4] acquires battery business from **KRAFT** (food)	$1,800,000 N.A.	Leveraged buyout for cash, June 24	KOHLBERG KRAVIS ROBERTS (Duracell Holdings)	$24,000	1.33%
				GOLDMAN SACHS (Kraft)	N.A.	—
20	**SHAWMUT** and **HARTFORD NATIONAL** (bank holding companies) merge to form **SHAWMUT NATIONAL**	$1,792,494 290%	Merger by exchange of common and preferred stock, February 29	SHEARSON LEHMAN HUTTON (Shawmut)	$3,000	.17%
				GOLDMAN SACHS (Hartford National)	$2,750	.15%
21	**DUN & BRADSTREET** (publishing) acquires **IMS INTERNATIONAL** (information services)	$1,660,000 686%	Acquisition for common stock, May 26	GOLDMAN SACHS (Dun & Bradstreet)	$6,250	.38%
				SHEARSON LEHMAN HUTTON (IMS International)	$1,000	.06%
22	**BNS**[5] acquires **KOPPERS** (construction materials and services)	$1,629,566 301%	Acquisition for cash, November 14	SHEARSON LEHMAN HUTTON FIRST COUNTY NATWEST INTERNATIONAL LTD. (BNS)	$8,610 $4,345	.53% .27%
				DILLON READ FIRST BOSTON (Koppers)	$1,250 $9,000	.08% .55%
23	**MONTGOMERY WARD HOLDING**[6] acquires **MONTGOMERY WARD** (retail stores) from **MOBIL** (petroleum)	$1,587,000 102%	Leveraged buyout for cash, June 23	KIDDER PEABODY (Montgomery Ward Holding)	N.A.	—
				SALOMON BROTHERS (Mobil)	N.A.	—
24	**TATE & LYLE** (sugar, food) acquires **STALEY CONTINENTAL** (corn products, food services)	$1,572,184 218%	Acquisition for cash, June 6	MORGAN STANLEY (Tate & Lyle)	$4,720	.30%
				FIRST BOSTON MERRILL LYNCH CAPITAL MARKETS (Staley Continental)	$7,464 $6,138	.47% .39%
25	**TELE-COMMUNICATIONS** and **COMCAST** (joint venture) acquire **SCI HOLDINGS** (cable TV properties) from **KOHLBERG KRAVIS ROBERTS**	$1,550,000 N.A.	Acquisition for cash, November 2	FIRST BOSTON LAZARD FRÈRES (Tele-Communications & Comcast)	N.A. N.A.	— —
				KOHLBERG KRAVIS ROBERTS DREXEL BURNHAM LAMBERT MORGAN STANLEY SHEARSON LEHMAN HUTTON (SCI Holdings)	$15,000 $10,000 $10,000 N.A.	.97% .65% .65% —
26	**MAY DEPARTMENT STORES** acquires **FEDERATED DEPARTMENT STORES' FILENE'S** and **FOLEY'S** from **CAMPEAU** (shopping centers)	$1,507,000 N.A.	Acquisition for cash and notes, May 3	MORGAN STANLEY (May Department Stores)	N.A.	—
				FIRST BOSTON (Campeau)	N.A.	—
27	**COMMERCIAL CREDIT** (financial services) acquires and takes name of **PRIMERICA** (financial services)	$1,486,064 102%	Acquisition for cash and stock, December 15	FIRST BOSTON MORGAN STANLEY (Commercial Credit)	$1,125 $5,000	.08% .34%
				LAZARD FRÈRES (Primerica)	$10,000	.67%

Mergers and acquisitions

Securities offerings and buybacks

N.A. Not available.
† Closed-end investment company.

[4] Group led by Kohlberg Kravis Roberts.
[5] Group formed by Beazer PLC and Shearson Lehman Hutton.
[6] Group led by Montgomery Ward senior management and Kidder Peabody.



RANK		VALUE (000) % of book value	TRANSACTION	FINANCIAL INTERMEDIARIES (Client)	FEE (000)	FEE as % of deal
28	**PUTNAM PREMIER INCOME TRUST**† sells common stock	$1,400,000	Initial public offering of 140 million shares, February 18	SHEARSON LEHMAN HUTTON* WHEAT FIRST SECURITIES	$98,000	7.00%
29	**CSX** (transportation, energy) repurchases common stock	$1,380,157 101%	Cash tender offer for 43.1 million shares (28%) as part of a restructuring plan, October 18	WASSERSTEIN PERELLA	$2,135	.15%
30	**OCCIDENTAL PETROLEUM** sells common stock	$1,371,375	Public offering of 51.8 million shares, June 7	DREXEL BURNHAM LAMBERT* DONALDSON LUFKIN & JENRETTE FIRST BOSTON KIDDER PEABODY MERRILL LYNCH CAPITAL MARKETS MORGAN STANLEY PAINE WEBBER SALOMON BROTHERS SHEARSON LEHMAN HUTTON DEAN WITTER CAPITAL MARKETS	$51,750	3.77%
31	**ROBERT BASS GROUP and AOKI CORP.** acquire **WESTIN HOTELS & RESORTS** from **UAL**[7] (transportation)	$1,350,000 N.A.	Acquisition for cash, January 31	FIRST BOSTON (UAL)	N.A.	—
				INDUSTRIAL BANK OF JAPAN (Bass Group and Aoki)	N.A.	—
32	**BANK OF NEW YORK** acquires **IRVING BANK**	$1,346,739 116%	Acquisition for cash, stock and warrants, December 30	MORGAN STANLEY (Bank of New York)	$5,500	.41%
				GOLDMAN SACHS	$7,000	.52%
				J.P. MORGAN (Irving Bank)	N.A.	—
33	**PECHINEY** (metals) acquires 98.6% of **TRIANGLE INDUSTRIES** (packaging)	$1,250,795 376%	Cash tender offer, December 21	WASSERSTEIN PERELLA (Pechiney)	$10,000	.80%
				MERRILL LYNCH CAPITAL MARKETS	$900	.07%
				L.F. ROTHSCHILD (Triangle Industries)	$250	.02%
34	**OCCIDENTAL PETROLEUM** acquires **CAIN CHEMICAL**	$1,248,562 682%	Acquisition for cash, May 3	DREXEL BURNHAM LAMBERT (Occidental Petroleum)	N.A.	—
				LAZARD FRÈRES (Cain Chemical)	N.A.	—
35	**RHEINISCH-WESTFÄLISCHES ELEKTRIZITÄTSWERK AG** (electric utility) acquires **DEUTSCHE TEXACO AG** from **TEXACO** (petroleum)	$1,230,000 N.A.	Acquisition for cash, June 29	DILLON READ (Deutsche Texaco AG)	N.A.	—
36	**MAGNOLIA PARTNERS**[8] acquires **J.P. STEVENS** (textiles, home furnishings)	$1,216,348 248%	Acquisition for cash, May 5	MERRILL LYNCH CAPITAL MARKETS (Magnolia Partners)	$4,500	.37%
				GOLDMAN SACHS	$8,676	.71%
				KIDDER PEABODY (J.P. Stevens)	$350	.03%
37	**SSC HOLDINGS**[9] acquires **STOP & SHOP** (supermarkets, general merchandise)	$1,213,180 268%	Leveraged buyout for cash, June 22	KOHLBERG KRAVIS ROBERTS	$28,000	2.31%
				MORGAN STANLEY (SSC Holdings)	$4,000	.33%
				SHEARSON LEHMAN HUTTON (Stop & Shop)	$10,500	.87%

Mergers and acquisitions

Securities offerings and buybacks

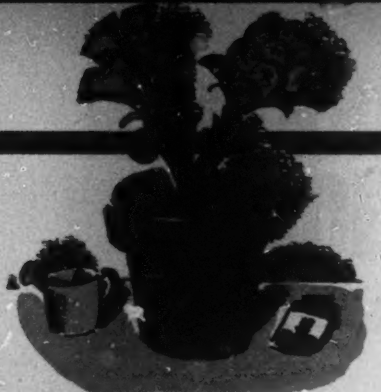
N.A. Not available.
† Closed-end investment company.
* Lead manager.
[7] Formerly Allegis Corp.
[8] Group formed by West Point-Pepperell and NTC Group.
[9] Group led by Kohlberg Kravis Roberts.

RANK		VALUE (000) % of book value	TRANSACTION	FINANCIAL INTERMEDIARIES (Client)	FEE (000)	FEE as % of deal
38	**SEAGRAM CO.** (distilled beverages) acquires **TROPICANA PRODUCTS** (beverages) from **BEATRICE**	$1,200,000 N.A.	Acquisition for cash, April 8	SALOMON BROTHERS (Seagram Co.) WASSERSTEIN PERELLA (Beatrice)	N.A. N.A.	— —
38	**PA HOLDINGS**[10] acquires **PNEUMO ABEX** (aerospace, defense) from **IC INDUSTRIES** (consumer products)	$1,200,000 N.A.	Leveraged buyout for cash, August 29	WASSERSTEIN PERELLA (PA Holdings) FIRST BOSTON (IC Industries)	N.A. N.A.	— —
40	**ITEL** (transportation and distribution) acquires **SIGNAL CAPITAL HOLDINGS, EQUILEASE, 17% of SANTA FE SOUTHERN PACIFIC, and 10% of AMERICAN PRESIDENT COS.** from **HENLEY GROUP** (multi-industry)	$1,193,988 N.A.	Acquisition for cash and common stock, September 23	MERRILL LYNCH CAPITAL MARKETS (Itel) LAZARD FRÈRES SC PARTNERS (Henley Group)	N.A. N.A. $2,000	— — .17%
41	**RIKLIS FAMILY CORP.** (holding company) acquires nine units of **E-II HOLDINGS** (consumer products) from **AMERICAN BRANDS** (tobacco, distilled beverages)	$1,192,000 N.A.	Acquisition for cash and preferred stock, July 5	MORGAN STANLEY (American Brands)	N.A.	—
42	**FINANCIÈRE CRÉDIT SUISSE–FIRST BOSTON** and **FIRST BOSTON** merge to form **CS FIRST BOSTON**	$1,186,000 101%	Merger and buyout of both companies' shares for cash, December 22	DILLON READ (First Boston)	$2,150	.18%
43	**AMERICAN BRANDS** (tobacco, distilled beverages) acquires **E-II HOLDINGS** (consumer products)	$1,128,600 286%	Acquisition for cash, February 29	MORGAN STANLEY (American Brands) DREXEL BURNHAM LAMBERT MERRILL LYNCH CAPITAL MARKETS SHEARSON LEHMAN HUTTON (E-II Holdings)	$8,000 $3,580 $5,030 $5,030	.71% .32% .45% .45%
44	**RJR NABISCO** (cigarettes, food) repurchases common stock	$1,123,500 215%	Cash tender offer for 21 million shares (8.5%), April 26	LAZARD FRÈRES	$2,500	.22%
45	**EASTMAN KODAK** (photographic supplies) sells notes	$1,100,000	Offering of $1,100,000 of 9.125% notes due [illegible], March 1	MORGAN STANLEY MERRILL LYNCH CAPITAL MARKETS SALOMON BROTHERS	$7,150	.65%
45	**TEMPLETON GLOBAL INCOME FUND**† sells common stock	$1,100,000	Initial public offering of 110 million shares, March 17	MERRILL LYNCH CAPITAL MARKETS	$71,500	6.5%
45	**COMSTOCK PARTNERS STRATEGY FUND**† sells common stock	$1,100,000	Initial public offering of 110 million shares, May 19	MERRILL LYNCH CAPITAL MARKETS	$71,500	6.5%
48	**FIRST FIDELITY BANCORP.** and **FIDELCOR** merge to form a new **FIRST FIDELITY BANCORP.**	$1,099,867 152%	Merger by exchange of common and preferred stock, February 28	RYAN BECK (First Fidelity Bancorp.) GOLDMAN SACHS (Fidelcor)	$3,300 $3,300	.30% .30%
49	**R.H. MACY** (department stores) acquires **FEDERATED DEPARTMENT STORES' BULLOCK'S/BULLOCKS WILSHIRE and I. MAGNIN** from **CAMPEAU** (shopping centers)	$1,099,000 N.A.	Acquisition for cash and notes, May 3	DREXEL BURNHAM LAMBERT KIDDER PEABODY (R.H. Macy) FIRST BOSTON (Campeau)	N.A. N.A. N.A.	— — —
50	**FLEET FINANCIAL** and **NORSTAR BANCORP** merge to form **FLEET/NORSTAR FINANCIAL GROUP**	$1,087,470 124%	Merger by exchange of common and preferred stock, January 4	SALOMON BROTHERS (Fleet Financial) SALOMON BROTHERS (Norstar Bancorp)	$2,500 $2,500	.23% .23%

Mergers and acquisitions

Securities offerings and buybacks

N.A. Not available.
† Closed-end investment company.
[10] Group formed by Wasserstein Perella and Henley Group.



EXPLANATORY NOTES

Deals eligible for the list include:

1. U.S. public offerings of securities (except short-term securities) by domestic and foreign corporations, issued under a single prospectus or offering circular.
2. Cash tender offers by domestic corporations or by foreign corporations tendering in the U.S., including those of companies buying in their own securities.
3. Mergers or acquisitions in which the buyer or seller is a U.S. company or part of one. To be eligible, offerings must be effective in 1988 and tender offers must have expired during the year. Mergers and acquisitions are eligible if legally closed during the year or, when not legally closed, if the prospective buyer has paid a portion of the purchase price in cash during the year.

The list excludes short-term financings, government securities, routine debt offerings by financial companies, repackagings of mortgage and other debt, and financings other than public offerings—such as bank borrowings and private placements.

VALUE OF DEAL

Debt assumed in an acquisition is not included in the price. Amounts for cash offerings are the total amounts raised; for tenders the total amount paid. All securities issued in acquisitions or mergers are valued at the market price on the date of closing. When two companies merge through an exchange of stock to form a new company, the company whose stockholders received the larger share of the new company is treated as the buyer, and only those shares issued to stockholders of the small company are valued.

PERCENT OF BOOK VALUE

Book value calculations indicate the price paid (or amount of equity capital raised) per share as a percentage of the shareholders' equity per share of the acquired company or issuer at the end of the last quarter preceding the transaction.

TRANSACTION

Dates under this heading are effective dates for offerings, expiration dates for tenders, and closing dates for acquisitions and mergers.

FINANCIAL INTERMEDIARIES

For underwritten public offerings, the co-managers are listed and the lead manager is indicated by an asterisk. In the case of acquisitions and mergers, the intermediaries are typically investment banking firms that assisted in the transaction.

FEE

The figures represent the amounts charged by the financial intermediaries assisting in the deals. In underwritings, part of the fee is paid to other members of the underwriting syndicate or to dealers other than the co-managers. In mergers and acquisitions, fees paid for financing services are excluded, when possible. ■

"Sincerity and conviction - not glibness - are the great persuaders. Believers are closers."

Zig Ziglar

Zig Ziglar, author of
Secrets of Closing the Sale.

There's No Substitute for Conviction.

Sales Consultants and Zig Ziglar have both learned that the only way to achieve selling goals is through honest commitment to the sales objective. A smooth line of talk and a few good jokes can make for interesting conversation, but rarely lead to solid, consistent sales performance.

Account Executives at Sales Consultants are believers who know how to find other believers. They use their knowledge of their industries to locate the people who make sales, not just conversation. And because recruiting sales and marketing professionals is all we do, we have the inside track on the best talent in the country.

Sales Consultants is your most reliable source for proven sales, sales management, and marketing professionals. We believe in what we do, which means we'll find a believer for you. For the Sales Consultants office nearest you, check your local white pages.

SALES CONSULTANTS®

Finding and placing sales, sales management and marketing talent is our only business.(SM)

150 offices nationwide.

Trading in Richmond, Virginia as Sales Careers.

80.3%* TOTAL RETURN

ALL-WEATHER STOCK FUND

T. Rowe Price Equity Income Fund. This Fund follows a conservative strategy of investing primarily in high-quality stocks that generate high dividends and have potential for favorable performance in up and down markets. Minimum initial investment $1,000 ($500 for IRAs). And no sales charges!

Call 24 hours for a free information kit
1-800-638-5660
ext. 3150

T. Rowe Price, 100 E. Pratt St., Baltimore, MD 21202
Send me a prospectus with more complete information, including management fees and other charges and expenses. I will read it carefully before I invest or send money.

Name

Address EIF003150

City/State/Zip

Invest With Confidence
T.RowePrice

7.5% and 22.4% are the 1-year and average annual 35-month total returns respectively for the periods ended 9/30/88. Total return represents past performance. Return and share price will vary, and shares may be worth more or less at redemption than at original purchase. *Cumulative total return since inception 10/31/85 to 9/30/88. Figures include changes in principal value, reinvested dividends and capital gain distributions. T. Rowe Price Investment Services, Inc., Distributor.

[illegible]

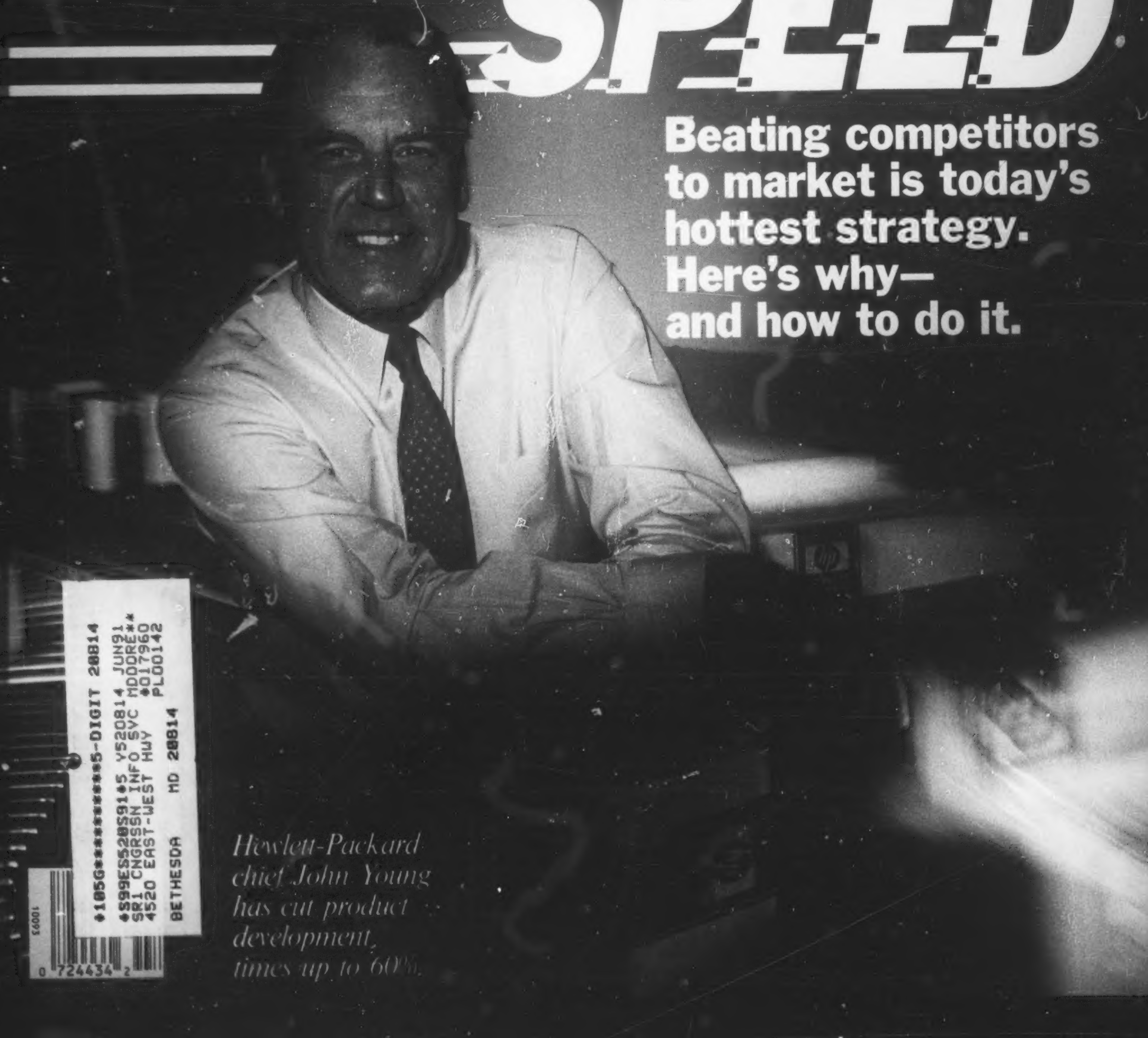
■ ROGER SMITH SPEAKS OUT • THE NEXT RECESSION • GREAT JAPANESE MISTAKES

FEBRUARY 13, 1989
$3.50

FORTUNE

SPEED

Beating competitors to market is today's hottest strategy. Here's why— and how to do it.



Hewlett-Packard chief John Young has cut product development times up to 60%.

*105G**********5-DIGIT 20814
*S99ES520S91*5 Y520814 JUN91
SR1 CNGRSSN INFO SVC MDDORE**
4520 EAST-WEST HWY *017960
PL00142

BETHESDA MD 20814

10093
0 724434 2

FEBRUARY 13, 1989

FORTUNE

WALTER CALAHAN

COVER: Katherine Lambert photographed Hewlett-Packard Chief Executive John Young at the company's direct marketing distribution center in Sunnyvale, California.

MANAGING/Cover Stories

HOW MANAGERS CAN SUCCEED THROUGH SPEED 54

It takes more than just stepping on the gas. Today's hottest competitive strategy requires companies to transform themselves. The rewards of being quicker to market are worth the effort. *by Brian Dumaine*

HEWLETT-PACKARD'S WHIP-CRACKER 58

He's Chief Executive John Young, who believes speed will be the essential management tool of the Nineties.

WHAT FLEXIBLE WORKERS CAN DO 62

Training employees in several jobs can help companies respond to the market faster. It also increases efficiency, quality, productivity, and job satisfaction. *by Norm Alster*

THE BITTER SPLIT IN ORGANIZED LABOR 66

"Product development was like elephant intercourse. Much hooting and throwing of dirt, and then nothing would happen for a year." COVER STORY/PAGE 54

CORPORATE PERFORMANCE

ROGER SMITH: "THE U.S. MUST DO AS GM HAS DONE" 70

In a first-person account, GM's chief executive talks frankly about his record at the helm of the world's largest industrial company. Excerpt: "If I had the opportunity to do everything over again, I would make exactly the same decision that I made in 1981 . . . I'd rebuild General Motors, inside out and from the bottom up . . . But I sure wish I'd done a better job at communicating with GM people." He also reflects on criticism, his favorite gadgets, factory automation, and why he has a Xerox machine at home.

THE ECONOMY

WHEN WILL A RECESSION HIT? 80

Quite possibly not for a good while, and the next one needn't be severe. New forces, from the growth of services to financial deregulation, are moderating the business cycle and reducing risks. Forecasters expect growth for at least another year, but most still bake a downturn into their long-run cakes. Even this resilient expansion, a Methuselah among upswings, could be laid low by shock or folly. *by Louis S. Richman*

POLITICS & POLICY

WASHINGTON'S WAR AGAINST LBO DEBT 91

Watch out, Wall Street—policymakers of every political hue have decided that takeover artists borrow too much. Says a top congressional aide: "Something will be done. The question is what." Eliminating tax deductibility of interest is probably too radical. Expect more modest steps that will remove some thrill and profit—and risk—from the leverage game. *by Ann Reilly Dowd*

VOL. 119, NO. 4

"The drug smugglers are going to be limited only by their imaginations."

PAGE 8

"People look at this as helping the company and say, 'They never helped me. Why should I help them?' "

PAGE 66

"When I saw that our people didn't understand my vision for GM, I knew I had to get them on board. And I did."

PAGE 70

"Look, you're paying more for this company than an American would."

PAGE 94

"We're undergoing a change like Honda did when it went from making motorcycles to cars."

PAGE 112

"What is most dangerous about the new racism on campus is that the responses to it set the stage for more."

PAGE 115

MONEY & MARKETS

WHAT FOREIGNERS WILL BUY NEXT 94

Auto parts makers, semiconductor producers, and biotech outfits with lots of strong patents will be the hottest tickets. Look for some very fancy prices. But unlike LBO buyers, foreign acquisitors are less interested in big, cash-rich companies loaded with plodding divisions that can be sold to pay off debt, and more interested in strategic goals. Says a senior vice president of a major Japanese trading company: "We don't sell our babies to pay the bills. Breaking up companies is not our way." *by John J. Curran*

COMPETITION

THE BUYING BINGE IN BUSINESS BOOKS 101

Now it can be told! Readers have discovered that the corporate world is about Money! Power! Sex! Some authors are getting rich quick. Read all about it! *by Christopher Knowlton*

LOOKING AHEAD

THE COMING BATTLE OVER YOUR TV SET 104

The telephone companies want to extend their powerful fiber-optic networks into your home and sell you video entertainment. No way, say cable TV operators, who are doing their level best to keep the Baby Bells out. *by Joel Dreyfuss*

THE WORLD

GREAT JAPANESE MISTAKES 108

Sure, the economic colossus of the East seems to be whipping the rest of the world with regularity. But take heart: Nobody's perfect. Have you forgotten singing underwear? *by Carla Rapoport*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 8

Jack Welch's new British venture, bankers' slim pickings in bonds, the commodities scam, how shippers get nailed by drugs, and more.

FORTUNE FORECAST 27

The trade deficit is still heading the right way. The pace of imports is unsustainable, and exports have plenty of steam left. *by Vivian Brownstein*

Also: A fresh look at productivity.

PERSONAL INVESTING 31

FORTUNE's quarterly investment strategy report says stop worrying about the economy and concentrate on finding value. *by John J. Curran*

Also: Portfolio Talk with money manager Mason J. Hawkins.

LETTERS TO FORTUNE 40

COMPANIES TO WATCH 76

FORTUNE PEOPLE 112

ON THE RISE 113

OTHER VOICES 115

New racism on campus. *by Thomas Sowell*

OFFICE HOURS 121

How important is morale, really? Surprise: maybe not all that important. *by Walter Kiechel III*

KEEPING UP *by Daniel Seligman* 123

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, John J. Curran, Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, California), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Bill Saporito, Lenore Schiff, Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John Huey, John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Alan Farnham, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Stephen Madden, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo)
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Todd James, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Karen Andrews, Charles J. Attardi, Leslie Brenner, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, George J. Habit, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kapian (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Haire
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

MARIANNE BARCELLONA

Speed merchant Brian Dumaine burns up the ice on New York City's Wollman rink.

PARTICIPATIVE management, just-in-time inventory, quality circles—recent years have brought a panoply of techniques from which managers can choose. What a feast! But, sadly, not wholly satisfying. For none of these has proved the be-all and end-all solution to making a company run faster, jump higher, and clobber the competition.

Speed—the subject of our cover package (page 54)—is a new technique that proponents claim does just that. More formally called time-based strategy, it is founded on a simple precept: Think in terms of time—how long it takes to develop, manufacture, and deliver a product or service. Devotees of speed get orders out faster and products to market sooner. And that, after all, is what competition is all about.

Our man on the speed beat is associate editor Brian Dumaine, who has been fast on his feet since his teenage days playing hockey on the ponds of New Hampshire. Dumaine, who was assisted by reporter Sarah Smith, knew he was onto a good story when a consultant told him about a client corporation that was using speed techniques. Alas, Dumaine says, the company's executives would not talk: "They thought they had found such a valuable management tool they didn't want the competition to know about it." Fortunately, other companies—Motorola, AT&T, and GE among them—felt less constrained. John Young, CEO of Hewlett-Packard and an avowed disciple of speed, allowed as how he has adopted some personal time-management techniques, including one you will read about called just-in-time worrying.

STEVEN W. LEWIS

Norm Alster

Norm Alster's accompanying article describes a related development, training workers in several different skills. By building flexible work forces, companies not only increase speed; they also enhance quality, efficiency, and job satisfaction. Says Alster: "Having workers who can do more than one job addresses many different kinds of strategic challenges—the need to improve productivity, respond to changing technology, and maintain competitiveness despite growing shortages of skilled labor."

Strategy. Challenge. Competitiveness. Enough said. Hurry up and read.

EXECUTIVE EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President; Michael J. Klingensmith, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S. and possessions, one year (27 issues) $47.97; Canada, one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, FL 33630-0604.
© 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company.

BY JOHN J. CURRAN

STOP WORRYING ABOUT THE ECONOMY AND CONCENTRATE ON FINDING VALUE

Some "recession-proof" stocks are overpriced, says FORTUNE's quarterly investment guide.

WHAT THE HECK DO I DO NOW?

FOUR BY FIVE

STOCKS

■ **The safest bets are big growth stocks, entertainment companies, and—no fooling—basic industry.**

IMAGE BANK

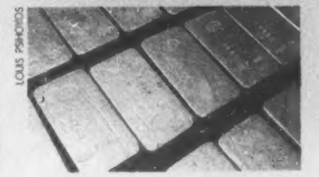
BONDS

■ **T-bills and long-term Treasuries are buys, but the gray panthers have driven municipals out of sight.**

FOUR BY FIVE

REAL ESTATE

■ **Offices and shopping malls are hurting. Warehouses and Texas properties are worth a look.**


LOUIS PSIHOYOS

COMMODITIES

■ **Gold, corn, and soybeans could decline. But a Midwestern drought is driving up the price of winter wheat.**

■ What's a poor fellow to believe? The seers at Drexel Burnham Lambert think the economy will flourish in 1989, corporate earnings will grow 8%, and stocks will climb. Strategists at Donaldson Lufkin & Jenrette expect the economy to wither, earnings growth to sputter, and stocks to slip.

Life need not be so difficult in these uncertain times. Investment strategy does not rely on forecasting, or at least it shouldn't. Rather, it should be a thoughtful balancing of risks and returns. The risks at this juncture are real enough—higher interest rates, recession, a falling stock market—but they are not so great that investors should pass up potential winnings. The stock market is not dangerously overvalued, and good investments can be found. Despite rising interest rates, some bonds are worth considering. Promising niches can be found, too, in real estate and commodities.

The smartest course now is to allocate your funds as though you might have to ride those investments through a recession. That's not a forecast, but a recommended exercise that will make you focus on the underlying value of securities. Happily, these very same investments are also the best performers in good times. What follows is a guide to the principal markets.

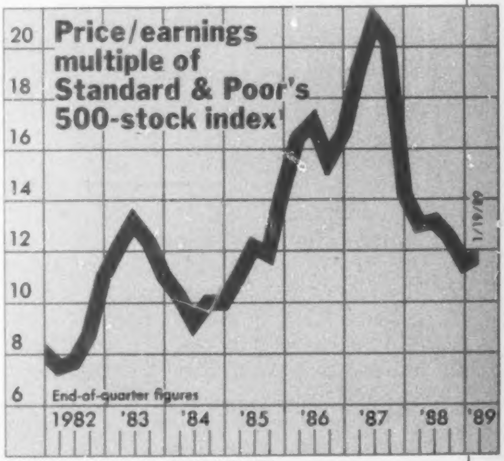
■ **STOCKS:** For the past six years, even with Black Monday figured in, the stock market has averaged a 16.5% compound annual return. Don't plan your retirement around that number. Though stocks are still a good investment, the return in coming years should more closely approximate the long-term historical average of 10% per year—roughly half from appreciation and half from dividends. That's a long way from what investors have grown accustomed to, but it beats money market funds.

But what about rising interest rates, which are supposed to be bad for stocks? At their current levels, interest rates are not the threat that many people believe. One time-tested measure compares the interest rate on Treasury bills with cash-flow yields—the percentage return investors would get if all the cash flow on stocks were paid out as dividends. Cash flow is considered a more accurate gauge of stocks' attractiveness than dividends because it includes money that companies can use for stock repurchases. When cash-flow yields fall to less than twice the T-bill rate, it is time to sell stocks. Such a one-shot measure of stocks' worth may seem a bit simplistic. But it tipped investors off to the 1983 market decline of 15%, as well as the 1987 debacle.

Currently the indicator is mildly bullish:

OVERPRICED NO MORE

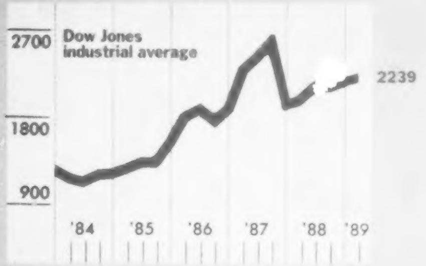
Corporate earnings zoomed far more than stock prices in 1988, and the market's P/E dropped to 12.2, a level not seen since 1985.



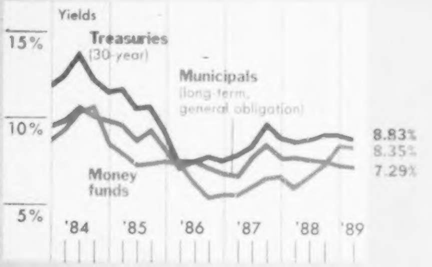
[1]BASED ON EARNINGS FOR THE LATEST FOUR QUARTERS

STATE OF THE MARKETS

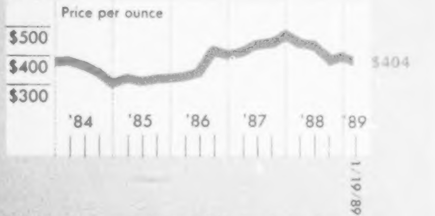
Stocks



Bonds



Gold



This is FORTUNE's fortnightly look at the major markets of the past five years.

*BASED ON EARNINGS FOR THE LATEST FOUR QUARTERS.

SOURCES: SALOMON BROTHERS, BOND BUYER, DONOGHUE'S MONEY FUND REPORT, COMMODITY EXCHANGE

The cash-flow yield on stocks is still 2.3 times the T-bill rate. Says Elaine Garzarelli, the chief quantitative analyst at Shearson Lehman Hutton and a true believer in this number: "It won't yield a sell signal unless the rate on T-bills rises from the current 8.2% to 9.5%, or unless stocks rise above 320 on the S&P 500, which would lower the cash-flow yield." The S&P 500 recently was 11% below Garzarelli's sell point.

Investors' other great fear is recession. The risk that the recent run-up in short-term interest rates could nudge an already mature recovery over the edge is real enough. But investors who dive in and out of stocks on the basis of business-cycle worries may leave the market at the wrong time. Even if the economy does turn down, who's to say you will get back into the market at the right time? Many of the market's most dramatic gains have come during recessions.

A smarter bet is to allocate the stock portion of your portfolio to issues that will hold up well in recession. Oddly, the old-time favorites like utility stocks no longer fit the bill. Many of them have been bid so high over the past year in anticipation of recession that some analysts consider them overvalued. Food stocks, another recession refuge in years past, have been pushed up in the frenzy of corporate takeovers.

Among the most solid bargains right now, says investment strategist Steven Einhorn of Goldman Sachs, who is generally wary of stocks, are the large-capitalization growth stocks. **Sallie Mae**, the student loan marketing organization, and **Philip Morris**, he says, "offer solid growth and they are very attractively priced." Einhorn also likes **Merck** and some other big drug companies.

Mario Gabelli, chairman of Gamco Investors, one of the most successful investment firms on Wall Street, believes stocks like those of moviemaker **MCA** are the best way to prepare a portfolio for a recession without forfeiting returns. "A movie's sales are a function of its appeal, not of the economy," he says. More important, the stock, recently going at $47, has a potential breakup value in the mid-$60s. **Warner Communications** is another sure-footed entertainment company with takeover possibilities, says Gabelli, who puts the takeover value at roughly 50% above Warner's current price.

It's usually thought that cyclical industries like aluminum and paper are the last place to be in a recession. But after repeated cost cutting, many companies in basic industries are primed to keep pumping profits even if the economy sputters. Michael Sherman, investment strategist at Shearson Lehman Hutton, is advising clients to load up on **Alcan Aluminium**, **Dow Chemical**, and **Stone Container**.

■ **BONDS:** Rising interest rates are bullish for bonds. That's right. Though they mean lower bond prices for now, they also suggest a slower economy down the road. That should pave the way for yields to sink and for prices to ascend.

It takes willpower to buy bonds when rates are rising, but it should soon prove to have been a smart move. Inflation at 4% is simply not high enough to support a sustained uptrend in bond rates. Even if inflation creeps up to 5%, as FORTUNE expects, the inflation-adjusted yield will still be generous by historical standards.

The more vexing question is which bonds to be in. Both intermediate ten-year Treasury bonds and long-term 30-year bonds yield roughly 9% these days. Many investors balk at buying the riskier long-term bonds because the coupon rate is no greater than for short-term bonds whose prices are less prone to fluctuation. But Larry Biehl, a San Francisco financial adviser who is telling his clients to buy long bonds, expects the rate on T-bonds to be down to 8% by the end of 1989. If so, their prices would rise handsomely. By one rule of thumb, a 30-year bond rises 10% for every percentage point drop in interest rates, whereas a ten-year bond rises only 6%. Says Biehl: "We're playing bonds for the total return, not just the coupon."

For investors with a lower tolerance for risk, money market yields are temptingly plump these days: 8.4% in mid-January, up from 7.5% just three months earlier. The biggest drawback to short-term yields is that they are short term. Interest rates may be high today, but they could start falling next week.

Certificates of deposit and Treasury bills, available in maturities of three months and up, allow you to lock up today's rates for a while. But it pays to shop around. One pleasant surprise: Three-month Treasury bills now pay *more* than bank CDs of the same maturity, and the income is exempt from state and local taxes. How can this be? Says Norberto Mehl of Banxquote, a money market data service: "Banks have felt that they could afford to offer rates that lag behind Treasuries because the demand for CDs has been so strong." Mehl believes this quirky situation, in which investors can enjoy the extra security of a Treasury plus a higher yield, won't last long.

The municipal market is full of expen-

REPORTER ASSOCIATES *Joshua Mendes and Ellen Schultz*

sive merchandise. One reason is that the elderly are scrambling to lower their taxable income and minimize the effects of the new Medicare Catastrophic Coverage Act, which slaps a surtax on most oldsters.

As a result of the heightened demand, muni yields are hardly a prize these days. For an investor in the 28% tax bracket, the 6.6% yield on a five-year AA-rated bond is no greater than the after-tax yield on a five-year Treasury. Investors in the 33% bracket, however, can still come out slightly ahead with munis.

Convertibles are looking more attractive. Their yields are fat compared with those on stocks—7.5% on average, vs. 3.6% on the S&P 500. Furthermore, analysts at First Boston note that the conversion premium on converts—or the amount by which their price exceeds the value of the stock for which they can be exchanged—is about 22%, down from 34% a year ago. Unlike straight corporate bonds, converts can benefit from takeovers, which drive up the price of the underlying stock, though they can be hurt as well. Because it's difficult to buy and sell small quantities of corporate bonds, individual investors are better off playing these securities through a convertible mutual fund. Two with good records are **American Capital Harbor** and **Dreyfus Convertible Securities**.

■ **REAL ESTATE:** Returns from brick-and-mortar investments have been crumbling amid oversupply and slumping demand. The chart at right shows that the vacancy rate in offices, though down from the 1986 peak, is still generally high. Other soft spots abound. Housing prices in the Northeast are slipping, public storage warehouses are in oversupply, and many shopping malls are falling on hard times.

Still, these gloomy developments have a bright side. Falling prices ultimately yield bargains. One of the most promising places to invest nowadays is Texas, where real estate prices have been dropping for four straight years. Houston and its suburbs, with a horrific 28.7% office vacancy rate, have enough empty space for 78 skyscrapers. But real estate experts say the city's prospects are beginning to improve. Unemployment in the Lone Star state is down to 7.1% from a high of 11.1% in 1986. Investors who venture in, however, should do so only with experienced guides.

OFFICE VACANCY RATES

CITY	1983	1986	1988
Atlanta	10.3%	18.3%	17.1%
Boston	7.7%	13.8%	13.7%
Chicago	12.8%	17.3%	13.5%
Dallas	23.2%	27.7%	28.0%
Denver	26.4%	26.5%	25.1%
Houston	29.1%	29.9%	28.7%
Los Angeles	15.9%	17.3%	15.4%
Miami	11.4%	21.1%	24.3%
San Francisco	10.6%	19.4%	15.3%
Washington, D.C.	10.1%	14.8%	12.8%
National Average	16.2%	21.5%	19.7%

SOURCE: COLDWELL BANKER OFFICE VACANCY INDEX

The office glut is starting to ease in most metropolitan areas, but only steely nerved contrarians should invest.

One of the best routes to Texas real estate is through **Weingarten Realty Investments**, a REIT that has been investing in Texas real estate since 1948. Weingarten owns 106 shopping centers and has managed to keep them 94% leased even through the worst of times. The stock currently trades at $27 a share, and Burland East, a real estate analyst at Alex. Brown in Baltimore, thinks it will hit $40 when the Texas economy picks up. Investors won't go hungry in the meantime: The dividend yield is a beefy 6.2%.

Industrial warehouses are another promising area. In many cities, demand for space is strong thanks to the lower dollar, which has boosted exports. Investors have very few ways to play this highly specialized market. One REIT heavily invested in industrial warehouses is **Copley Properties** in Boston. Copley is slightly more risky than most other REITs because it builds new warehouses instead of just buying and leasing. But investors are compensated for that risk with a yield of 9.8%.

■ **COMMODITIES:** Despite recent upticks in some commodity prices, worldwide inflation is still subdued. That's bad news for goldbugs, and here's some more. A recent study by Morgan Stanley notes that gold is selling well above the cost of digging up more of the stuff. Based on current mining costs, the replacement value of gold is about $300 per ounce, far less than the $404 per ounce gold fetches on the market. Nevertheless, investors who have been itching to buy a bit of gold for peace of mind might take advantage of its recent weakness. Because gold pays no dividend and offers little prospect of price appreciation, invest no more than 5% of your portfolio.

As the FBI's sting in the Chicago exchanges shows, trading in commodity futures can be dangerous to your wallet. But the game, whose market risks dwarf any fraud revealed so far, goes right on. Things were looking splendid for corn and soybean speculators just a few weeks back, when concerns about dwindling supplies were driving up futures prices. But those prices were mowed down by experts from the U.S. Department of Agriculture, who in January raised their estimate of the 1988 crop. Alan London, a futures analyst at Paine Webber in Chicago, thinks the versatile bean could fall to $7 per bushel from the current price of $7.60. Corn could go to $2.25 from its current price of $2.70. If he is right, this spring will produce a bountiful harvest for short-sellers.

The most promising prospect down on the farm is hard winter wheat, primarily used for baking bread. Two of the main growers—China and the U.S.—are suffering dry spells in their chief wheat-growing regions. Two drought years back-to-back haven't hit the U.S. since the dust bowl of the 1930s. Richard Loewy, a grain analyst at Prudential-Bache, thinks the supply problem could become acute. "We could be going into March in a desperate situation," he says. Unless rain starts falling soon in the Midwest, Loewy thinks, wheat could reach $5.50 on the September futures contract. To those willing to make a bet at current prices, Loewy's prediction suggests a potential profit of $7,000 per contract, or a 412% return on a $1,700 down payment. The only drawback is in what your neighbors might think when they see you cheering on the drought.

HOW MANAGERS CAN SUCCEED THROUGH SPEED

It takes more than just stepping on the gas. Companies must transform themselves—and the rewards are worth it.

■ *by Brian Dumaine*

"If you knew Time as well as I do," said the Mad Hatter, "you wouldn't talk about wasting it." —Alice in Wonderland

THE NUMBERS are nearly incredible. General Electric used to take three weeks after an order to deliver a custom-made industrial circuit breaker box. Now it takes three days. AT&T used to need two years to design a new phone. Now it can do the job in one. Motorola used to turn out electronic pagers three weeks after the factory got the order. Now it takes *two hours.*

Speed is catching on fast. A recent survey of 50 major U.S. companies by Kaiser Associates, a Vienna, Virginia, consulting firm, found that practically all put time-based strategy, as the new approach is called, at the top of their priority lists. Why? Because speed kills the competition.

Quickly developing, making, and distributing products or services brings important, sometimes surprising competitive benefits. Market share grows because customers love getting their orders *now*. Inventories of finished goods shrink because they aren't necessary to ensure quick delivery; the fastest manufacturers can make and ship an order the day it's received. For this and other reasons, costs fall. Many employees become more satisfied because they're working for a more responsive, more successful company and because speeding operations requires giving them more flexibility and responsibility (though the changes can be controversial—see following story).

Even quality improves. Explains Hewlett-Packard Chief Executive John Young, a leading apostle of speed: "Doing it fast forces you to do it right the first time." By placing speed at the heart of his strategy, Young has enabled his company to turn out computer terminals at lower cost than those master clonemakers, the Taiwanese. In FORTUNE's seventh annual survey of corporate reputations, published in the last issue, computer executives and security analysts ranked Hewlett-Packard the most admired company in its industry—displacing perennial champ IBM.

Speed often pays off in product development even if it means going over budget. An economic model developed by the McKinsey & Co. management consulting firm shows that high-tech products that come to market six months late but on budget will earn 33% less profit over five years. In contrast, coming out on time and 50% over budget cuts profits only 4%.

Little wonder that corporate speed is becoming a principal topic of study among management consultants and business school professors. It has the conceptual heft to influence virtually every operation in every company. What manager doesn't feel overwhelmed by the confusing catalogue of "hot" management methods? What's the magic recipe? Is it just-in-time inventory blended with quality circles or, uh, the flat organization and a pinch of pay for knowledge? All are valuable tools, but none by itself is the answer.

"Thinking in terms of time," says Rudyard Istvan, a senior vice president at Boston Consulting Group, "gets all those activities working together for a common purpose." For example, Young declared early last year that Hewlett-Packard's breakeven time, or the interval between a new product's conception and profitability, including covering all development costs, must be cut in half across the entire corporation (see box). That can be done in many ways, but faster product development is one of the best. Faced with such a simple yet staggering goal, employees are forced to begin pulling in the same direction and deciding which management tools—just-in-time inventory, quality circles, new worker incentives—would best help meet it.

Marlboro
Marlboro
Shell
Mar

Honda uses its Formula One race cars to keep speed in the corporate consciousness and teach engineers lessons for the factory.

A company can generally find thousands of ways to speed operations, but masters of the game emphasize a few major tactics. Among them:

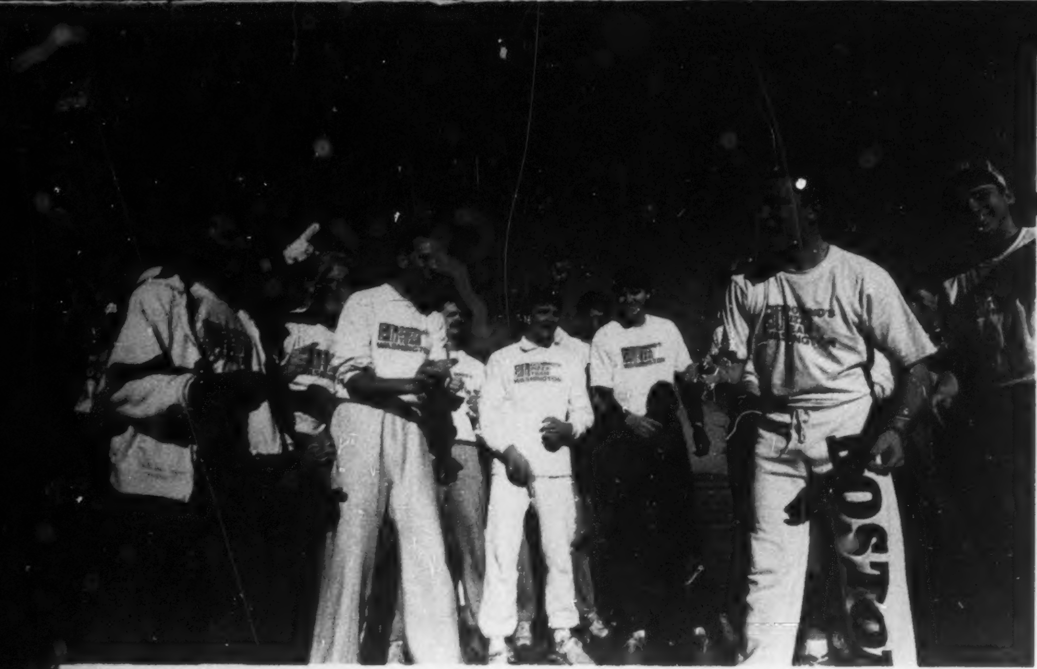
■ **START FROM SCRATCH.** Practically everyone agrees that the worst way to speed up a company is by trying to make it do things just as it does, only faster. The machinery—and certainly the workers—will simply burn out. Instead, smart executives announce a breathtakingly ambitious goal, like Young's target of halving breakeven time. No one can get there just by stepping on the gas, although some try. "The gut reaction," says Steven Wheelwright, a professor at the Harvard business school, "is, let's cut six months out. It's not, let's do the analysis and rethinking that will allow us to cut six months out."

But that's what it takes. Example: General Electric's rescue of its old and stagnant circuit breaker business. Says William Sheeran, a GE general manager: "We had to speed up or die." GE's $1-billion-a-year electrical distribution and control division in Plainville, Connecticut, makes, among other things, circuit breaker boxes for commercial buildings. When threatened in the early 1980s by the market's slow growth and tough competitors like Siemens and Westinghouse, GE assembled a team of manufacturing, design, and marketing experts that focused on overhauling its manufacturing process. The goal, suitably daunting, was to cut the time between a customer's order and delivery from three weeks to three days.

Time for radical thinking. GE was producing circuit breaker boxes in six plants around the U.S. Who needs six? The team decided that one plant would be more efficient, so in 1985 it consolidated its operations and focused on automating its factory in Salisbury, North Carolina.

But the team didn't want to automate operations as they were. In the old system, engineers custom-designed each box, a job that took about a week. They chose from 28,000 unique parts to create the boxes, and setting up an automated system to han-

PHOTOGRAPH BY ERIC VARGIOLU—D.P.P.I



WALTER CALLAHAN

The spirit of speed: Domino's Pizza store managers get psyched up for a six-mile run.

dle that many parts would have been a nightmare. So the design team made most of the parts interchangeable, reducing their number to 1,275 while still leaving customers a choice of 40,000 different sizes, shapes, and configurations of boxes.

The team also devised a way to cut out the engineers, replacing them with a computer. Now when a salesman enters specifications for a circuit breaker into a computer at GE's main office in Connecticut, the order flows to a computer at Salisbury, which automatically programs the factory machines to make circuit breaker boxes with minimum waste of material.

Impressive advances, but the team still had to conquer another source of delay: solving problems and making decisions on the factory floor. The solution was to get rid of all line supervisors and quality inspectors, reducing the organizational layers between worker and plant manager from three to one. Everything those middle managers used to handle—vacation scheduling, quality, work rules—became the responsibility of the 129 workers on the floor, who are divided into teams of 15 to 20. And what do you know: The more responsibility GE gave the workers, the faster problems got solved and decisions made.

Today the Salisbury plant basically runs itself at a rapid clip. On the factory wall a giant electronic sign hung 25 feet off the ground flashes in red letters, letting workers know how long it's taking them to make each circuit breaker box, how many boxes they have to make that day, and how many they've made so far. The sign lets employees pace themselves and make their own scheduling decisions. Says Dottie Barringer, an ebullient woman who has worked at the plant for the past 12½ years: "I like to be my own boss. I don't like to be told what to do. I know if I can't get it done in eight hours, I can do it in ten without getting permission for overtime. We're behind right now. No one has to tell us we have to work Saturday."

Results: The plant, which used to have a two-month backlog of orders, now works with a two-*day* backlog. Productivity has increased 20% over the past year. Manufacturing costs have dropped 30%, or $5.5 million a year, and return on investment is running at over 20%. The speed of delivery has shrunk from three weeks to three days for a higher-quality product with more features. GE is gaining share in a flat market. Says Sheeran: "We'd be out of business if we hadn't done it."

■ **WIPE OUT APPROVALS.** Consultants recommend that managers take a hard look at the number of times a product or service requires some sort of internal approval before reaching the customer. Philip Thomas, president of Thomas Group, a Dallas consulting firm specializing in speed, says that manufacturing typically takes only 5% to 10% of the total time between an order and getting a product to market; the rest is administrative. Says he: "Most people don't know how their own company works. Make a flow chart of your administrative process to show what's really happening out there. It usually shows that getting a product to market takes longer than people think."

Jack Reichert, CEO of Brunswick, the $3-billion-a-year sporting goods company, decided in the mid-Eighties that developing new products—outboard motors, automatic bowling scorecards, fishing reels—took too long. "Product development was like elephant intercourse," he says. "It was accompanied by much hooting, hollering, and throwing of dirt, and then nothing would happen for a year." A top amateur bowler who says he has modeled Brunswick on Japanese companies, Reichert cut the layers of management between him and the

SUPERFAST INNOVATORS

Company	**Product**	**Development time** OLD	NEW
Honda	**cars**	5 years	**3 years**
AT&T	**phones**	2 years	**1 year**
Navistar	**trucks**	5 years	**2.5 years**
Hewlett-Packard	**computer printers**	4.5 years	**22 mos.**

SUPERFAST PRODUCERS

Company	**Product**	**Order-to-finished-goods time** OLD	NEW
GE	**circuit breaker boxes**	3 weeks	**3 days**
Motorola	**pagers**	3 weeks	**2 hours**
Hewlett-Packard	**electronic testing equipment**	4 weeks	**5 days**
Brunswick	**fishing reels**	3 weeks	**1 week**

shop worker from ten to five. Says he: "If you want to know how to do a job right, ask the people who are doing it; don't have some corporate bureaucracy tell them how to do it." Reichert also bumped up spending authority for division heads from $25,000 to $250,000. At headquarters in Skokie, Illinois, he gets only a weekly one-page report from each division chief. "Those reports," says Reichert, "tell me what *they* need." Reichert estimates that Brunswick can now develop new outboard motors, for example, 25% to 30% faster.

The same principle works in service companies. At Adca Bank, a subsidiary of West Germany's Rabobank (assets: $90 billion), a loan used to go through numerous layers of bureaucracy. Says Hans Van der Velde, managing director at Adca Bank: "Someone at the branch sent loan papers to someone at headquarters who was looking at them and changing them. Then his boss was looking and changing them. All those layers were useless." The bank got rid of five layers and gave officers in all branches more authority. Before, it took 24 man-hours to approve a loan. Now it takes 12.

■ **TRY TEAMS.** Like GE in its circuit breaker business, nearly all the fastest companies form multidepartment teams. AT&T is applying that approach to product development with resounding success, giving its teams tough deadlines and lots of authority to make the decisions required to meet them. AT&T used to take two years designing a new telephone. But, says John Hanley, an AT&T vice president of product development, "We came to the realization that if you get to market sooner with new technology, you can charge a premium until the others follow."

AT&T began developing a new cordless phone for the home called the 4200 in early 1988. Hanley faced a rigid AT&T bureaucracy and was skeptical about his chances of cutting time out of the development process. Rather than trying to save 10% in time here and 5% there, Hanley aimed to reduce the development cycle by 50%. Says he: "It made us change the way we did everything." In the past, AT&T product development worked like a relay race, with the engineering department handing a design over to manufacturing, which handed the finished product over to marketing to sell. For the 4200, Hanley considered setting up a skunk works, a product development lab off premises where engineers could work relatively free of bureaucracy. He soon rejected that idea, figuring that if his people couldn't develop a new product within AT&T they wouldn't achieve a significant and permanent change.

Instead, Hanley formed teams of six to 12, including engineers, manufacturers, and marketers, with authority to make every decision on how the product would work, look, be made, and cost. The key was to set rigid speed requirements—six weeks, say, for freezing all design specs. Because the team didn't need to send each decision up the line for approval, it could meet these strict deadlines. With this new approach AT&T cut development time for the 4200 phone from two years to just a year while lowering costs and increasing quality.

KATHERINE LAMBERT

Brunswick CEO Reichert: making new-product development less like elephant intercourse

Some companies make suppliers part of the team. Navistar, the Chicago truckmaker, landed a major contract with U-Haul in 1987 by promising to deliver a new moving van fast. It was a stiff challenge. To make loading easier, the truck bed had to be only 24 inches off the ground, compared with the standard 48 inches. That required an entirely new chassis design and a novel type of pneumatic suspension that lowered the truck bed four inches at the flick of a switch. Says Neil Springer, chief of Navistar's truck building subsidiary: "We realized we couldn't deliver the truck fast enough in the traditional way. It had to be done in teams, with everybody, suppliers included, working simultaneously." The approach succeeded and produced a bonus. Dana, a supplier that makes frames and axles, suggested a way to help lower the bed by redesigning the axle, a suggestion that would not have been heard until perhaps a year later under normal procedures. Taking advantage of it would have caused considerable delay while manufacturing retooled. Instead engineering got Dana's suggestion into the original specs.

■ **WORSHIP THE SCHEDULE.** Managers must make clear that nothing short of disaster is a valid excuse for delay. Last year Motorola designed a new electronic pager and an automated factory to build it in an unheard-of 18 months rather than the standard three years. The first step to achieving that goal was setting clear deadlines. After that came discipline.

continued

CEO Young believes speed will be the essential management tool of the Nineties.

KATHERINE LAMBERT

HEWLETT-PACKARD'S WHIP-CRACKER

You wouldn't suspect that John Young lives life in the fast lane. He has worked for one company, Hewlett-Packard, for 31 years. He's been married to one wife—they met in elementary school—for 34 years. He drives himself to the office every morning by 7:30. For relaxation he likes to go fishing.

But when it comes to work, Young, 56, is obsessed with speed. He is not an easy man to read, not demonstrative or introspective. He reminds many of a fighter pilot—cool, competent, confident. He's cheerful and wants to be liked; new parents who work at Hewlett-Packard receive a baby blanket from him, and newlyweds get a silver bowl. But he is obviously driven. He insists that Hewlett-Packard develop, manufacture, and deliver products faster than ever before and faster than the competition. He conveys that message repeatedly, jetting around the world to the company's 55 divisions, and he takes it to heart. A manager at the company says that if she leaves an important query on his desk at 5 P.M., "you can bet a year's salary an answer will be on my desk when I walk in the next morning."

Young's drive to work takes only eight minutes. Once there, he practices what he calls just-in-time worrying: not bothering with a task until he absolutely must. For example, he won't go over a speech until minutes before delivering it. Why? "If you worry too soon," he says, "things will change in the interim, so you end up having to deal with them twice."

Helped by training as an electrical engineer and an MBA from Stanford, Young rose speedily through Hewlett-Packard. By the time he was 31 he had become general manager of the microwave division, then the company's largest, and at 46 he took the reins from company founders William Hewlett and David Packard. Today he also chairs the Council on Competitiveness, a group dedicated to making U.S. industry a stronger force in the global battle, and he thinks that what's good for Hewlett-Packard is good for America. "We've ignored a critical success factor: speed," he says. "Our competitors abroad have turned new technologies into new products and processes more rapidly. And they've reaped the commercial rewards of the time-to-market race."

Young uses several techniques to get Hewlett-Packard moving faster. At the Lake Stevens, Washington, facilities, which make electronic testing equipment, engineers have an expert system, a computer that uses artificial intelligence. It automatically analyzes each design and recommends changes that would make a new product easier to manufacture—by using more parts that snap rather than screw together, for instance. Over the past three years the operation has cut failure rates for its 30 products by 84% and manufacturing time by 80%.

The company also uses computers to speed communications. If an engineer wants the best and fastest solution to a design problem, he sends out a query on a computer network that links him with colleagues around the world, forming, in effect, one big brain that can direct its power to the task at hand. The network also provides a catalogue of parts the company knows from experience are cheap and reliable.

Young recently assembled 100 productivity managers to watch the company's 90 R&D labs. Like hyperactive honeybees, they constantly cross-pollinate the labs with the wisdom and experience of others. Says corporate engineering director Marvin Patterson: "They are experts trying to solve problems, not middle managers taking up space."

Hewlett-Packard has made considerable progress. It developed the DeskJet printer, the first near-laser-quality printer retailing for under $1,000, in just 22 months. A job like that used to take over twice as long. The DeskJet became an instant hit when introduced last year.

Yet Young thinks his company is still too slow. To remedy that, he last winter announced a sweeping, companywide program called BET, for breakeven time, in which he challenged employees to cut by half the interval between a new product's conception and profitability. It's an awesome challenge, much like trying to make a Volkswagen drive as fast as a Porsche. The only way to do that, of course, is to redesign the car. Young hopes BET will force his managers to redesign the product development process, getting people from all divisions to work together in flexible, fast-moving teams.

Don't such dramatic goals make workers feel strained or afraid? No, says Young: "People find speed exciting. After all, my workers like the challenge. They like to win at business. That's why they're there." The fast chief executive with the cool exterior feels the same way.

"When you're dealing on the edge of the envelope, when you're flying blind, there's always the temptation to take a little more time," says Scott Shamlin, a director of manufacturing at Motorola. "But we hold to schedule as a religion." Motorola's automated factory in Florida can build and ship an electronic pager some two hours after it receives an order. The job used to take three weeks. Motorola leads the U.S. pager market over Asian rivals.

■ **REMEMBER DISTRIBUTION.** Even the world's fastest factory won't offer much competitive advantage if everything it produces gets snagged in the distribution chain, a lesson Benetton, the Italian sportswear company, has knit in its heart. Located in Ponzano, Italy, Benetton makes and distributes 50 million pieces of clothing worldwide each year, mostly sweaters, slacks, and dresses.

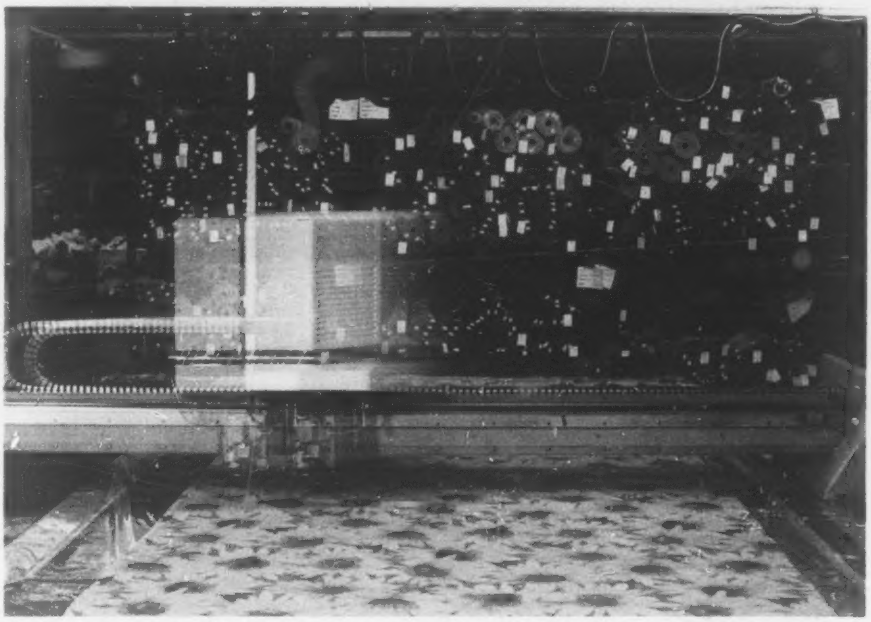
Benetton found that the fastest way to run a distribution system is to create an electronic loop linking sales agent, factory, and warehouse. If, say, a saleswoman in one of Benetton's Los Angeles shops finds that she is starting to run out of a best-selling red sweater in early October, she calls one of Benetton's 80 sales agents, who enters the order in his personal computer, which sends it to a mainframe in Italy. Because the red sweater was originally created on a computer-aided design system, the mainframe has all its measurements on hand in digital code, which can be transmitted to a knitting machine. The machine makes the sweaters, which factory workers put in a box with a bar code label containing the address of the Los Angeles store, and the box goes into the warehouse. That's right—one warehouse serves Benetton's 5,000 stores in 60 countries around the world. It cost $30 million, but this distribution center, run by only eight people, moves 230,000 pieces of clothing a day.

Once the red sweaters are sitting snugly in one of 300,000 slots in the warehouse, a computer sends a robot flying. By reading the bar codes, the robot finds the right box and any other boxes being shipped to the Los Angeles store, picks them up, and loads them onto a truck. Including manufacturing time, Benetton can get the order to Los Angeles in four weeks. If the company already has red sweaters in stock, it takes one week. That's quite a performance in the notoriously slow garment industry, where hardly anyone else will even bother with reorders. And if Benetton suddenly realizes that it didn't make any, say, black cardigans and purple blouses this year and they're hot, it can manufacture and ship a "flash collection" of black cardigans and purple blouses in huge quantities in a few weeks.

■ **PUT SPEED IN THE CULTURE.** Honda did, and it definitely helps. Though the company entered Formula One auto racing only six years ago, cars powered by Honda engines have won this demanding annual circuit three times. By circulating young engineers through the Formula One team, Honda teaches its people the racing spirit, which means thinking about minutes, not hours. Shoichiro Irimajiri, a managing director at Honda, points out important similarities between the race track and the factory: "When a problem arises, you have to find the solution now. And if it is a problem you have never seen before, you have to have the flexibility to create a new solution on the spot."

Putting speed in the culture can be fun. Just look at Domino's Pizza, which has become America's second-largest pizza chain (after Pizza Hut) by promising customers a $3 discount on any pie that takes longer than 30 minutes to arrive at their home.

CEO Tom Monaghan, who reads the sports pages religiously, owns the Detroit Tigers, and jogs 6½ miles a day, has modeled his company on a professional sports league, with regional divisions competing to make the best pizza, deliver it faster, and sell more than the next region. Like quarterbacks on Monday mornings, Domino's pizza makers watch films of the fastest pizza makers in the country. A delivery person, whose uniform includes track shoes, must run from the truck to the house, taking stairs two at a time—elevators are forbidden because they take longer—carrying the pizza in his arms like a tailback headed for the goal line. Domino's franchisee in Washington, D.C., takes managers out every Monday for a six-mile jog. Says Monaghan: "Our whole business is built on speed."


VITTORIANO RASTELLI

A Benetton computer directs this machine to start cutting cloth soon after orders arrive.

The advantages of speed are undeniably impressive. But why should that be surprising? Why all the hoopla among management theorists? After all, it's not exactly a new precept that time is money.

True enough. What's new is a realization that time is an awful lot of money—far more than most executives understood. Warns Istvan of Boston Consulting Group: "If you come up against one of these fast corporations and you're not prepared, you're history." Those who grasp the new calculus, who appreciate the unprecedented advantages of getting new products to market sooner and orders to customers faster, may well hold the principal tool for achieving competitive preeminence in coming years. ■

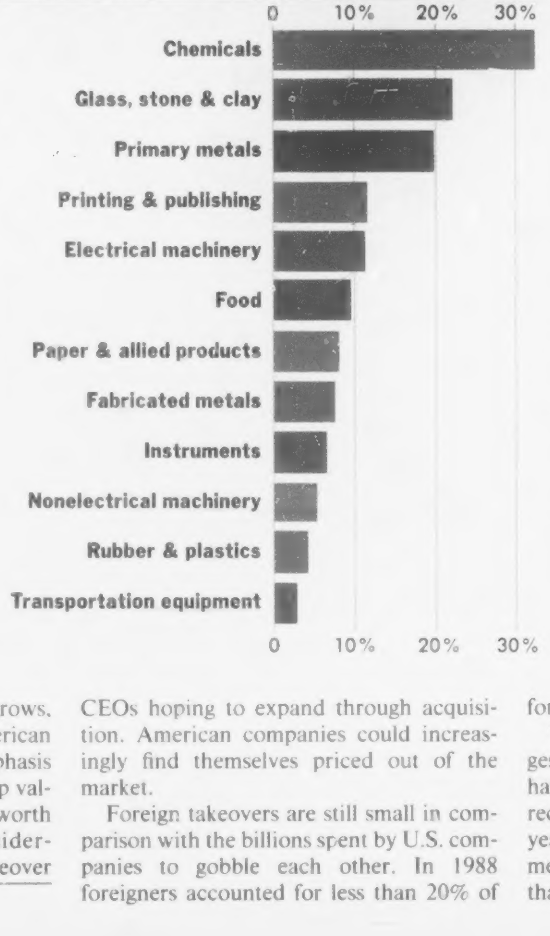
WHAT FOREIGNERS WILL BUY NEXT

Auto parts makers, semiconductor producers, and biotech outfits with lots of strong patents will be the hottest tickets. Look for some very fancy prices.

■ *by John J. Curran*

THE FOREIGN ACCENT in the U.S. takeover game is bound to get heavier in the next few years. Increasingly aggressive and sophisticated international companies are spending freely—some would say wildly—for big pieces of American industry. So far, returns have been meager, but foreign buyers have more on their agenda than short-term profits. As their influence grows, they could bring some lasting changes to the American mergers and acquisitions market.

WHAT FOREIGN COMPANIES OWN IN THE UNITED STATES



SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS. ALL FIGURES AS OF JANUARY 1, 1987

Foreign buyers represent a new kind of acquisitor. Unlike leveraged-buyout artists, they are less interested in big, cash-rich companies loaded with plodding divisions that can be sold to pay off debt. Says Ryuuji Kitamura, senior vice president of C. Itoh, a Japanese trading company that has made numerous U.S. acquisitions: "We don't sell our babies to pay the bills. Breaking up companies is not our way."

Instead they try to advance strategic goals. The companies they seek are likely to be smaller, lesser-known firms whose acquisition can round out a global market position, add a U.S. plant, or provide access to new technology or a strong brand name. When foreign buyers find a company that fits, they go for it regardless of price. Many have paid what American counterparts would regard as too much.

As their influence on Wall Street grows, foreigners may change the way American investors value companies. The emphasis could shift from cash flow and breakup value—the popular determinants of worth now—toward more strategic considerations. The definition of a hot takeover stock could change too, with small biotech and semiconductor companies held in higher esteem than giant breakup candidates.

If foreigners keep paying inflated prices, though, they could drive up stakes for all acquirers and reduce returns. That's good news for shareholders, who can expect ever higher bids for their stock; bad news for CEOs hoping to expand through acquisition. American companies could increasingly find themselves priced out of the market.

Foreign takeovers are still small in comparison with the billions spent by U.S. companies to gobble each other. In 1988 foreigners accounted for less than 20% of all U.S. deals. But that is sure to rise as the Japanese continue their shopping spree. Japanese exporters are eager to shift production to the U.S. to counter protectionist sentiments and because the strong yen makes America a lower-cost place to manufacture. U.S. acquisitions by Japan are already way up. In 1987, the latest year for which hard numbers are available, there were 146 deals, more than double the year before. Last year, according to estimates, the number was nearly 200.

The foreign share could grow even more if Congress decides to curtail domestic takeovers. One popular proposal to curb LBOs would reduce the deductibility of interest on takeover debt (see Politics & Policy). That could make many deals uneconomic for American buyers, but would leave the field wide open to foreign bidders, since most could continue deducting interest charges in their own countries.

It's hard to prove that foreigners pay too much, since they often acquire private companies. But investment bankers who work on their deals say the prices are often excessive. Says Peter Rona, president of IBJ Schroder Bank & Trust, a New York–based subsidiary of Industrial Bank of Japan, which has participated in dozens of international deals: "In the 1980s foreigners have significantly overpaid for acquisitions."

The surest indication of foreigners' largess is in the shockingly poor returns they have earned on their U.S. investments in recent years. During 1987, not an atypical year, the return on direct foreign investments in U.S. assets amounted to no more than 5% on average, according to statistics

REPORTER ASSOCIATE *Susan E. Kuhn*

compiled by the Commerce Department. That's well below what American investment bankers would consider a competitive return. Of the six groups Commerce studied, the Japanese did worst, earning less than 4%, while the British did best, earning 6.7%. The Continental Europeans averaged a return of 5.4%.

DESPITE SUCH abysmal results, foreign companies will forge ahead and even pick up the pace of acquisitions. Siemens, the West German electronics giant, has made over 30 acquisitions in the U.S. but has yet to turn a profit. Says Hans Decker, president of the U.S. subsidiary: "Sure my company is not happy that we aren't making money from our U.S. holdings. But we are taking the long-haul view—we must." Siemens has stated that it will continue to be an aggressive acquirer of American assets in the years ahead.

Such a profits-be-damned approach could lead American companies to overbid in making acquisitions of their own. General Electric bought Borg-Warner's chemical business last September for $2.3 billion, an amount rumored to be beyond what Borg-Warner thought it could get. The reason for GE's generosity, investment bankers say, was that it was bidding against an aggressive group of companies, including a number of foreign firms. "GE wanted to make sure that foreign interests did not get into this particular segment of the market," says one banker. Borg-Warner's chemical division is the world's leading producer of ABS resins, used to make plastics for home appliances and automotive components, and a good fit with GE's fast-growing plastics business.

Many industries that foreigners have their eyes on are also the most promising for American companies. Siemens has identified five high-growth areas where it will continue to acquire: factory automation, office automation, telecommunications, semiconductor technology, and diagnostic medical equipment. In December, Siemens peeled off $844 million of its war chest of $10 billion in cash and marketable securities to buy the manufacturing arm of ROLM, a maker of computerized private telephone systems, from IBM.

One reason foreigners make such generous bids for U.S. companies is that they assess the value of a takeover target differently than Americans do. In the U.S., managers determine the price of a potential acquisition either by discounting projected cash flow to arrive at a present value or by looking at the cash flow multiples that similar companies in the same industry have sold for. While these methods can result in pricey deals too, especially when egos get involved, they generally are grounded in reality, since the cash flow from the acquired business must be sufficient to service the debt used to make the acquisition.

Foreign buyers, especially the Japanese, tend to skip such calculations. They want to know what the target company can do for them in the long run, how it augments the marketing plans they have already made. Says Peter G. Peterson, a former Secretary of Commerce and now chairman of the Blackstone Group, an investment bank that has handled some of the biggest Japanese deals: "Once they decide to buy a particular company, they are less likely to be deterred by price." Sometimes, he adds, "we have to tell our clients: 'Look, you're paying more for this company than an American company would pay.' "

When foreign competitors duel each other for a U.S. company, the bidding can quickly reach astronomical proportions. Says Claus Moehlmann, a managing director of First Boston who specializes in international acquisitions: "What you have are the best players worldwide looking to round out their global positions. They all go after the same properties."

Bridgestone's 1988 acquisition of Firestone is a prime example. The Japanese tiremaker entered the bidding after Pirelli of Italy made an initial hostile tender of $58 a share. The stock had been selling for around $35. Fearing that a large part of the huge American tire market would fall into Italian hands, Bridgestone countered with $80 a share, 38% higher than what Pirelli had bid. Not surprisingly, Bridgestone won. The reaction among analysts and investment bankers familiar with the deal was

SEIZO TERASAKI

SCOTT WITTE

Dainippon President Shigekuni Kawamura controls this Reichhold Chemicals plant in Illinois.

unanimous. Says one: "There's no question that Bridgestone paid too much."

Premium pricing is not limited to the Japanese. Campeau Corp. of Toronto bought Allied Stores for 25 times earnings in 1986, when the average multiple for such deals was 16. Last December, British publisher Robert Maxwell paid $90 a share for Macmillan, which was 40 times earnings and 539% of book value. Grand Metropolitan, the British food and liquor company, took over Pillsbury at the beginning of this year with a bid of $66 a share. Says James Murren, an analyst at C.J. Lawrence Morgan Grenfell, the New York subsidiary of a London securities firm: "You won't find anybody outside of a few Pillsbury employees who think that company is worth even $60 a share."

Part of the reason foreign companies can afford to pay so much is that they live by different accounting rules. Take the matter of goodwill, defined as that part of the purchase price that exceeds the market value of the assets acquired. If an American firm acquires another company, goodwill must be written off against income over a maximum of 40 years, producing a drag on earnings per share.

IN BRITAIN companies are able to write off goodwill against shareholders' equity, where it does no damage to earnings per share. Further, the acquiring company can prevent any potential damage to shareholders' equity by doing a "rights offering" prior to the buyout. The rights offering is an offer to sell additional stock to existing shareholders, usually at a discount, if the acquisition goes through. By this approach, the loss to shareholders' equity from the goodwill charge is mended by an additional input of new equity. Last October, Grand Met issued an $830 million rights offering in anticipation of its bid for Pillsbury.

If an American company had acquired Pillsbury at the price Grand Met paid, it would face an annual charge against earnings of around $50 million for goodwill for each of the next 40 years. Or consider another foreign buy: Unilever's 1987 acquisition of Chesebrough-Pond's. If an American firm had paid Unilever's price of $3.1 billion for this big consumer products company, the annual charge against earnings for goodwill would have been as much as $60 million a year for 40 years. Such

MAJOR FOREIGN ACQUISITIONS OF THE 1980s

YEAR	U.S. COMPANY BRANDS OR PRINCIPAL BUSINESS	FOREIGN OWNER COUNTRY	PRICE PAID MILLIONS
1989	**Triangle Industries** packaging	**Pechiney** France	$1,251
	Pillsbury Burger King, Green Giant, Häagen-Dazs	**Grand Metropolitan** Britain	$5,717
1988	**Farmers Group** insurance	**BAT Industries** Britain	$5,148
	Macmillan publishing	**Maxwell Communication** Britain	$2,558
	Triangle Publications *TV Guide, Seventeen*	**News Corp.** Australia	$3,000
	Gould electronics	**Nippon Mining** Japan	$1,061
	Intermedics pacemakers, medical products, electronics	**Sulzer Brothers** Switzerland	$800
	Federated Dept. Stores Abraham & Straus, Bloomingdale's	**Campeau** Canada	$6,520
	Telex computer terminals	**Memorex International** Netherlands	$920
	Staley Continental corn products, food service	**Tate & Lyle** Britain	$1,572
	Firestone Tire & Rubber tires	**Bridgestone** Japan	$2,621
	Tropicana Products fruit juices	**Seagram** Canada	$1,200
	G. Heileman Brewing Old Style, Colt 45	**Bond Corp. Holdings** Australia	$1,275
	First Jersey National banking	**National Westminster Bank** Britain	$820
	CBS Records Columbia, Epic	**Sony** Japan	$2,000
1987	**Kidde** Jacuzzi, Farberware, PGA golf clubs	**Hanson** Britain	$1,708
	Manpower employment services	**Blue Arrow** Britain	$1,342
	Reichhold chemicals	**Dainippon Ink & Chemicals** Japan	$550
	Heublein Smirnoff, Inglenook	**Grand Metropolitan** Britain	$1,200
	Celanese chemicals	**Hoechst** W. Germany	$2,886
	Chesebrough-Pond's Prince Matchabelli, Ragú, Vaseline	**Unilever** Britain/Netherlands	$3,096
1986	**Allied Stores** Ann Taylor, Jordan Marsh	**Campeau** Canada	$3,506
	Big Three Industries industrial gases	**L'Air Liquide** France	$1,044
	SCM Corp. Smith-Corona typewriters	**Hanson** Britain	$926
1985	**Inmont** inks	**BASF** W. Germany	$1,000
	Carnation Coffee-mate, Contadina, Friskies pet foods	**Nestlé** Switzerland	$2,941
1984	**Sedco** oil drilling	**Schlumberger** Netherlands Antilles	$970
	Utah International natural resources	**Broken Hill Proprietary** Australia	$2,400
1981	**Santa Fe International** oil and gas drilling	**Kuwait Petroleum** Kuwait	$2,501
	Texasgulf natural resources	**Elf Aquitaine** France	$2,742

SOURCE: MORGAN STANLEY & CO.

charges would be sure to evoke the wrath of security analysts and shareholders.

Some countries on the Continent don't recognize goodwill at all. Others permit several ways of disposing of it quietly, including shunting it to the shareholders' equity account as the British do. Even if a charge for goodwill does make it to the profit and loss statement, as is possible under West German accounting rules, it does not cause much of a stir since investors have a relaxed attitude toward financial reports. Says one European investment banker: "Shareholders here live in a sleepier world." Lack of investor scrutiny, bankers say, gives European companies tremendous leeway to bid aggressively.

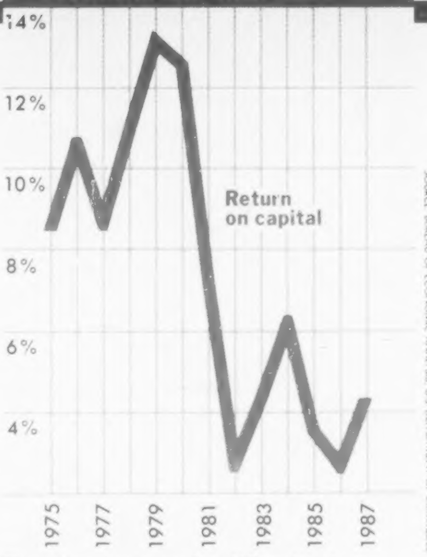
The rules give an accounting edge to the Japanese too. Typically their acquisitions are carried on the balance sheet at cost, so goodwill is not recognized. If an acquisition should crimp earnings per share for any other reason, it would hardly matter. Says C. Itoh's Kitamura: "You won't even find earnings per share in most Japanese shareholder reports. Investors just don't care about it."

In short, what can be a huge problem for American companies is no problem for foreign bidders. Says Jeffrey Rosen, co-head of international mergers and acquisitions at Wasserstein Perella, a New York investment firm: "There's no question that accounting gives foreign acquirers a big advantage over American companies. It also helps justify some deals that couldn't be justified on an earnings-per-share basis."

Many foreign acquirers also enjoy a significantly lower cost of capital, which allows them to accept a smaller return on overseas investment. Because Japanese interest rates are around 5%, companies can afford a higher offering price than American bidders tied to the prime rate, currently 10.5%. Japanese companies can also issue convertible bonds, which yield only 1.5%, further reducing their cost of capital.

NO INDUSTRY has been of greater interest to foreigners in recent years than chemicals. Foreign companies now own 32% of the industry's assets. The international slugfest began in 1985. Imperial Chemical of Britain paid what was then a fat 19 times earnings for the chemical division of Beatrice Foods. Later in the year BASF bought United Technology's Inmont chemical division, a leading producer of ink, for an equally rich price/earnings multiple. Most recently Reichhold Chemicals was acquired by Dainippon Ink & Chemicals of Japan in a pricey—and hostile—takeover.

FOREIGN EARNINGS ON U.S. INVESTMENTS



SOURCE: BUREAU OF ECONOMIC ANALYSIS, U.S. DEPARTMENT OF COMMERCE

The price of overpaying: When foreign companies went on a buying binge in the 1980s, their returns began to slip.

The auto industry is about to become a hotbed of takeovers. No, nobody is going after General Motors. But investment bankers at Nomura and other Japanese firms are scouring the U.S. for parts suppliers. Cars account for 36% of the U.S. trade deficit with Japan. Peterson of the Blackstone Group believes the Japanese really want to whittle down their surplus, and to do that they will push for U.S. automotive acquisitions. Says he: "In order for the manufacturing component of the trade deficit to turn, there is going to have to be a major turn in the automotive sector. That means foreigners will have to produce more cars and more parts in the U.S." For the Japanese, of course, increasing U.S. production is also good business. The strong yen makes it more profitable to build cars in America than import them. And as the Japanese increase production they will want to own more of their suppliers.

The weakening semiconductor industry also ranks high on the shopping list of foreign buyers. In addition to Siemens, other globally minded technology companies are eager to acquire a worldwide presence in chip manufacturing. Here, too, many of the suitors will be Japanese. Their timing is good. After some boom years, the industry is entering a flat period. The big premium in price/earnings multiples that semiconductor stocks once had has vanished.

Smaller industries, like paints and adhesives and test and measuring devices, are fertile ground for foreign incursions as well, investment bankers say. But none will attract as much attention as biotechnology. The Japanese in particular are hungry for biotech breakthroughs—and the patents that go with them. Analysts expect that many struggling, cash-short American bio-

DAVID GAMBLE

Allen Sheppard of Britain's Grand Met won flourmaker Pillsbury with a $66-a-share bid.

FORTUNE CUSTOMER SERVICE

OUR COMMITMENT TO EXCELLENCE

FORTUNE's commitment to excellence doesn't stop with its comprehensive, up-to-the-minute coverage of today's business world...

...we're just as dedicated to outstanding service for our valued customers.

CALL TOLL-FREE:
1-800-541-1000
FOR:

1. Change of Address
   - Please notify us 4 weeks in advance.
2. Any questions about your subscription.
   - Your subscription expiration date.
   - Delivery difficulties.
   - Missing issues.
3. Renewing your Subscription Early.
   - Guarantee uninterrupted delivery of FORTUNE.
4. Sending a FORTUNE gift subscription.

OR WRITE US:
FORTUNE Subscription
Service Department
P.O. Box 60001
Tampa, Florida 33660-0001
(Please include your label with all correspondence.)

FORTUNE

F3296

tech firms will command some of the richest takeover premiums in the years ahead.

Foreign buyers will continue to avoid giant diversified companies. While a few, such as Britain's Hanson PLC, occasionally go for such targets, most foreign buyers, especially the Japanese, have a strong preference for pure plays where they can buy the business and keep all the parts. Nor will Japanese buyers become big players in the hostile bidding war. Though they will sometimes consider roughhouse tactics to land their prey, most are still far from following Dainippon Ink & Chemicals' successful raid on Reichhold Chemicals. Says Blackstone's Peterson: "It's just not their way to do unfriendly deals."

CORPORATE AMERICA'S debt binge could produce another group of tantalizing takeover candidates, those infamous so-called stub stocks. Foreign firms are keeping close tabs on these companies, which have undergone leveraged recapitalizations that resulted in large payouts to shareholders, huge debt, and just a "stub" of public ownership left. Many of these companies will be sorely in need of an equity injection when the next recession hits. Says Moehlmann of First Boston: "Foreign firms are hoping to pick up those companies at a very good price."

Such unabashed acquisitiveness by foreigners may grind against the nerve of American nationalism. But as long as Americans continue to overconsume, there will be a need for foreign capital. To the extent that such a need exists, it is far better to get those infusions in the form of risk-sharing equity capital rather than still more debt. What's more, foreign capital is helping to rebuild America's industrial base. Many foreign acquirers are following up their acquisitions with additional capital to refurbish outdated plants and equipment. Bridgestone, for example, will invest $1.5 billion to modernize and expand Firestone's facilities.

The foreign takeover frenzy may bring a less tangible but no less important benefit. The willingness of foreign managers to accept substandard returns from their American investments in favor of longer-term strategic considerations is a risk that may or may not pay off. But to the extent that such a long view prompts American managers to be even a little less obsessed with short-term performance and a little more concerned with their company's long-range competitive position, it may turn out to be an unexpected dash of good fortune for American industry. F

JOYCE RAVID

Peterson: midwife to big Japanese deals

JIM TRITCH

Siemens of West Germany is the new owner of this ROLM plant in California.

GREAT JAPANESE MISTAKES

Sure, the economic colossus of the East seems to be whipping the rest of the world with regularity. But take heart: Nobody's perfect.

■ *by Carla Rapoport*

A BRIDGE TOO FAR

This $9 billion engineering wonder goes to an island few Japanese care to visit. The government plans two more bridges.

IN CASE YOU MISSED IT, the Japanese economy grew at a 9.3% rate in the second quarter of this fiscal year. Inflation? Almost nothing. Crime rate? Still among the lowest in the industrialized world. Not only is Japan rich, but everything still works. Well . . . almost everything.

In the dazzling glare of Japan's economic successes, it's easy to forget that the Japanese make mistakes like the rest of us. So, for just a moment, stop worrying about the Japanese challenge, put away the latest bestseller on Japan's plans to conquer the world, forget about the Pacific Rim for the rest of the day. Kick back, put your feet up, and enjoy a tour of Japanese bloopers.

They come in all shapes and sizes—from one-day business wonders like singing underpants to pork barrel extravaganzas that would have made Mayor Daley blush. "We are not Superman," says Hiroshi Mitsukawa, an official at the powerful ministry of international trade and industry (MITI). He should know. His department served as undertaker to Japan's boom-to-bust aluminum smelting industry, but not before it lost an estimated $2.5 billion. Adds Tadashi Yamamoto, head of the Japan Center for International Exchange, a foreign policy think tank: "People still think there is some kind of machine here, spewing out answers to every question. There isn't. The magnitude of some of Japan's failures is really incredible."

First, stop at Narita airport. Japan is a country where the trains run on time, the streets are clean, and the police spend most of their time giving directions to lost motorists. Yet Narita, Tokyo's main international airport, has only one runway. (New York's JFK has five.) Eleven years after opening, the airport remains unfinished. Some 45 airlines from 39 countries have yet to gain landing rights. If you do manage to land, you'll feel as if you're breaking out of prison when you head for town. The airport is surrounded by barbed-wire fences and guard towers manned by more than 1,500 policemen, most armed and in riot gear. What's going on here?

MIGHTY MITI's RESEARCH DUDS

PROJECT	COST	REASON FOR FAILURE
Remote-controlled undersea oil-drilling rig 1970-75	$36 million	**The device turned out to be no cheaper or easier to operate than conventional offshore oil rigs.**
Electric car 1970-77	$46 million	**Like everyone else, the Japanese have been unable to make a battery that lasts long enough for driving.**
Nuclear-powered blast furnace for steelmaking 1973-80	$110 million	**MITI underestimated the antinuclear lobby, which managed to kill the project before completion.**
Petrochemicals from carbon monoxide 1980-86	$84 million	**The worldwide oil glut made such costly alternative production unnecessary.**
Integrated circuits to withstand cold weather 1981-85	$11 million	**MITI realized nobody was interested in buying such circuits and dropped the project.**

THE ANSWER lies in a grimy two-story shack surrounded by barbed wire and fences just beyond the airport. This is the headquarters of the Chukaku-ha, a group of radicals who have managed to outsmart Japan's bureaucracy. Says Koichi Kishi, the well-dressed leader: "Narita is the last battleground. As long as Narita exists, we'll be here to fight it." So far, his followers have limited themselves to nuisance bombings and physical attacks. But they intend to go further. Says Kishi calmly: "It's our goal to destroy this airport. Our technology is not up to that standard yet, but it will be. We'll fight to the end."

This perhaps lunatic but effective fringe came to the area in the late 1960s to support vegetable farmers being pushed off their land to make way for the airport. Today eight of the original farmers plus scores of supporters live on what was supposed to be Narita's second runway, with the Chukaku-ha standing guard nearby. Airport officials say they hope to clear out protesters and finish the airport by the spring of 1991. That's hard to

REPORTER ASSOCIATE *David Kirkpatrick*

AN INDUSTRY TOO COSTLY

Planners didn't reckon on rising electricity prices when they built Japan's aluminum smelters, such as this now-empty one near Mount Fuji. The industry is all but dead.

imagine. Kimimasa Akitomi, who recently resigned as president of the airport authority, concedes that the real mistake at Narita was made years ago when farmers were not fully consulted on the government's plans.

The Japanese have a word for such consultation—*nemawashi*, literally the careful wrapping of a plant's roots before it is transplanted. Without *nemawashi*, things can go very wrong in Japan. Says a government official who asked not to be named: "In Narita's case, I fear the roots are dead. I don't know if we'll ever be able to get things right there."

The roots may be dead at Narita, but at least the airport is being used. In the town of Aomori, festivities earlier this year marked the opening of the Seikan tunnel, an engineering feat that took 24 years and set the government back $8.4 billion. The 86-mile tunnel, part of a grand prewar scheme to link Japan's four major islands, gets travelers from Tokyo to Sapporo in 12 hours and ten minutes, compared with 14 hours before. Of course, if travelers were in a hurry, they would fly, which takes an hour and 25 minutes. Not surprisingly, almost everyone going there takes the plane.

The Seikan tunnel was a dream for postwar Japan. Explains Ryohei Kakumoto, a director of the Japan Transport Economics Research Center, a privately funded research organization: "We could hardly imagine that airplanes would develop in the way they have. Many people died in ferry accidents in the 1950s. We thought the tunnel would be safer." A critic of Japan's transportation network, Kakumoto argues that even though the tunnel is finished, Japan should shut it down to eliminate further costs of maintenance and operation.

HARSH MEDICINE like that could also be prescribed for a $9 billion bridge completed last April between Japan's main island of Honshu and the semitropical, sparsely populated island of Shikoku. The bridge, the first of three aimed at bringing prosperity to backward Shikoku, is an engineering marvel but a commercial disaster.

continued

PHOTOGRAPH BY ROBIN MOYER

Of the 25,000 cars and trucks forecast to cross the toll bridge daily, only 13,000 are making the trip. (Heavy trucks pay $135, twice the ferry fare.)

Though most of the officials who made the original decision are gone, construction on the other two bridges continues. Why three bridges? Welcome to Japanese pork. Grouses a senior government official: "We've got three bridges in Godforsaken Shikoku and none across Tokyo Bay. These bridges are a scandal. One bridge, OK, maybe two. Three? Ridiculous."

SO THE JAPANESE are as good as the rest of us when it comes to waste and excess. What about commercial misfires? The best way to see Japan's biggest industrial boo-boo is from the air. Some 50 miles from the mouth of of the Tigris River, at a spot known as Bandar Khomeini on Iran's Persian Gulf shore, is a one-square-mile site of rusting girders and beams. Since it's easy to see, Iraqi planes were able to hit it with bombs on 19 raids. This mess is what's left of a $4.8 billion petrochemical project, a joint venture between the Iranian government and a group of Japanese companies led by Mitsui & Co.

The project was started in the early 1970s. Mitsui doggedly stuck to it through the Iranian revolution and in the face of overcapacity in the world petrochemical industry. When the Iran-Iraq war broke out, the Iranians insisted they could protect the plant. The complex was 85% finished when the first bomb fell in September 1980.

Of the $4.8 billion already lost, half came from Japanese sources, with 60% of that from Mitsui. Most of Mitsui's exposure, according to the company, is guaranteed by the Japanese government; the rest is covered by a special provision on the balance sheet. As part of the deal, Mitsui had been granted oil exploration rights in Iran. How did they work out? Says a Mitsui official with a shrug: "We didn't find a thing."

Mitsui can't take all the blame for Bandar Khomeini. The project was backed by MITI and Japan's Export-Import Bank. MITI is often credited with orchestrating Japan's industrial successes. Official chroniclers, however, often leave out MITI's orchestrated mistakes. Top of the list has to be Japan's aluminum smelting industry.

James Abegglen, an American who heads Asia Advisory Service, a management consulting firm in Tokyo, and is author of *Kaisha*, a book about the Japanese corporation, calls aluminum smelting in Japan "one of the biggest strategic mistakes in history." Officials at MITI don't disagree. Says Mitsukawa: "When electricity was cheap and raw materials were easily imported, we thought it would be a good industry for us." He explains that his predecessors did not expect electricity prices to go up so high after the oil shock.

At its peak in 1977, Japanese aluminum smelters had capacity to produce 1.64 million tons per year and employed more than 11,000 people in 14 companies. Today only one smelter is left, with 140 workers. Despite tax breaks and subsidies, accumulated losses for the industry peaked in 1985 at $1.1 billion. That was a heavy hit for the five companies still in the business. Says Abegglen: "One of the paranoid fantasies Westerners have about Japan is that the Japanese can see the future. They can't."

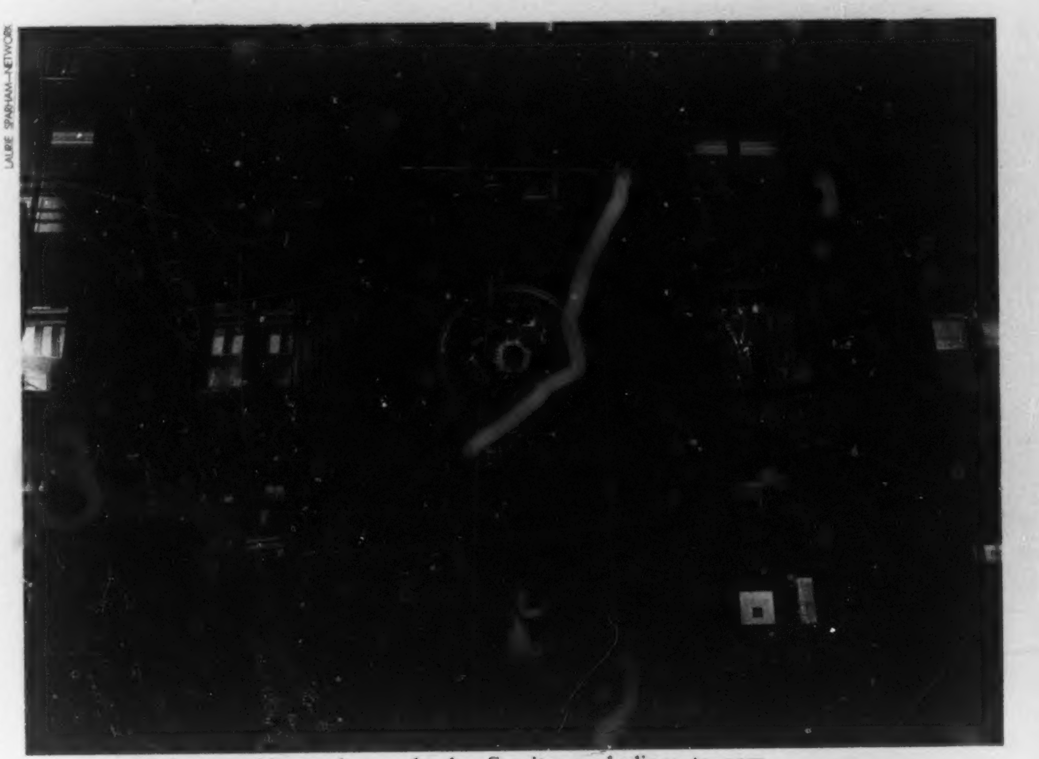
IF YOU HAVE any doubts, turn back to the table of MITI's research and development miscues of the past decade or so. Here are the projects you don't read about, the ones quietly buried away from the public eye. A nuclear-powered blast furnace and an undersea remote-controlled oil-drilling rig are two of a host of post–oil shock projects that have yielded no commercial results. More recently, MITI suffered another black eye when All Nippon Airways chose a General Electric engine for its new jets rather than the V-2500 jet engine developed in Japan by a group of engineering companies with around $200 million of MITI subsidies.

Even without MITI's help, Japanese managers make mistakes. A few are well known, like Sony's failure to capitalize on its Betamax format in videocassette recorders, eventually losing out to VHS. Most, however, are not, mainly because few Japanese companies make big, bet-the-company kinds of decisions. Further, explains Tom Zengage, a director of IBI, a consulting firm in Tokyo, Japanese annual reports are not that detailed. Says he: "When companies get into trouble, they can smear one division's losses into another. Things don't show up. After a loss-making subsidiary is spun off,

MANUEL CENETA

A LACK OF CONSENSUS
Aided by radicals, these farmers are blocking a badly needed second runway at Narita, Tokyo's main international airport.

there will be 85 tons of earth on it.”


LAURIE SPARHAM—NETWORK

INNOCENTS ABROAD
A Japanese builder paid $90 million more than the next bidder just to get the land under this London building, which now happens to be a protected landmark.

The dogged pursuer of the bungled, however, can find rich pickings among Japan's American exploits. Consider the assault on the U.S. elevator market by Osaka-based Fujitec. President Shotaro Uchiyama told the New York *Times* in 1982 that he planned to move the company's headquarters to New York City, buy himself a $1 million apartment, build a multimillion-dollar plant in Ohio, and boost Fujitec's worldwide sales to $500 million a year by 1985. In 1986 the company reported a loss of $43 million, thanks largely to its U.S. efforts, its first loss in 30 years.

Industry experts in the U.S. say Fujitec made a long list of mistakes. The company went after big projects all over the country instead of concentrating on one geographical area. Critics say it underbid to get business, though the company denies it. It pushed ahead with a new U.S. factory before getting a feel for the market, and neglected to build a strong maintenance arm. Says Daryl Anderson, president of Hesselberg Keesee & Associates, an elevator consulting firm in San Francisco: “They didn't ease into the country. They saw a humongous market and became like a kid in a candy store.”

Fujitec, still firmly based in Osaka, is profitable again, but the company refuses to comment on the financial status of its U.S. operation. The Ohio plant was finally completed, two years behind schedule. A leading U.S. competitor claims that Fujitec has less than 2% of the American elevator market. He adds, “The company is not a factor in any market at the moment.”

SOME 500 MILES southwest of Fujitec's Ohio plant is the Sanyo Manufacturing Corp. in Forrest City, Arkansas. In 1977 Sanyo, a major Japanese electronics company, bought a TV-set assembly plant from Warwick Electronics, then being spun off by Whirlpool. Employment rose from 400 to more than 2,400. But by 1985 Japanese managers found themselves battling the plant's union over fringe benefits and seniority issues.

Eventually Sanyo moved about half the plant's assembly work to Mexico to cut its losses. It didn't work out. A company financial manager in Arkansas reports that the subsidiary lost more than $34 million in 1988. For the three previous years, losses totaled about $42 million. Michael Kane, director of the U.S.-Japan International Management Institute at the University of Kentucky, says, “Japanese companies come with a mind-set. It worked in Japan so it will work in the U.S.”

Sumitomo Bank's $500 million investment in Goldman Sachs in return for 12.5% of the firm's profits was quickly made into a mistake by the U.S. Federal Reserve. As final details of the deal were being worked out in November 1986, the Fed ruled that as a commercial bank Sumitomo could have only a passive investment in Goldman, so there could be no significant new business between the firms. Sumitomo thus could send no trainees from Tokyo to Goldman Sachs in New York, as it had hoped. Goldman Sachs officials point out that because of Sumitomo's investment—and the Fed ruling—Sumitomo has less freedom to work with Goldman than do other Japanese banks. Sumitomo declines to comment on the matter. Privately, however, Sumitomo executives admit that they had not realized the ways in which Fed action could harm their deal until it was too late to pull out.

Add another name to the list of companies that saw a major acquisition turn sour in a hurry. Ohbayashi Corp., a leading Japanese construction company, delighted Pearson PLC of Britain last year with an offer of $255 million for Bracken House, the undistinguished headquarters of the *Financial Times* in London. The offer was around $90 million above that of the next highest bidder. The Japanese intended to tear down the building and put up a new one on the site, one of London's best locations. Within days, however, the British government classified the building as historic, preventing any alteration of its 1959 facade. The Japanese are stuck with an overpriced building.

“They weren't getting good advice,” says a specialist in property acquisitions in Tokyo. “It's a case of more money than sense.” By that measure, it is just possible that more Japanese mistakes are in the making. F

NOTE

ONLY THE FOLLOWING PAGES OF THIS
PUBLICATION HAVE BEEN FILMED

Cov. 1, Pgs. 2-4, 12, 58,
61-63, 66, 68, 71, 72, 88,
89

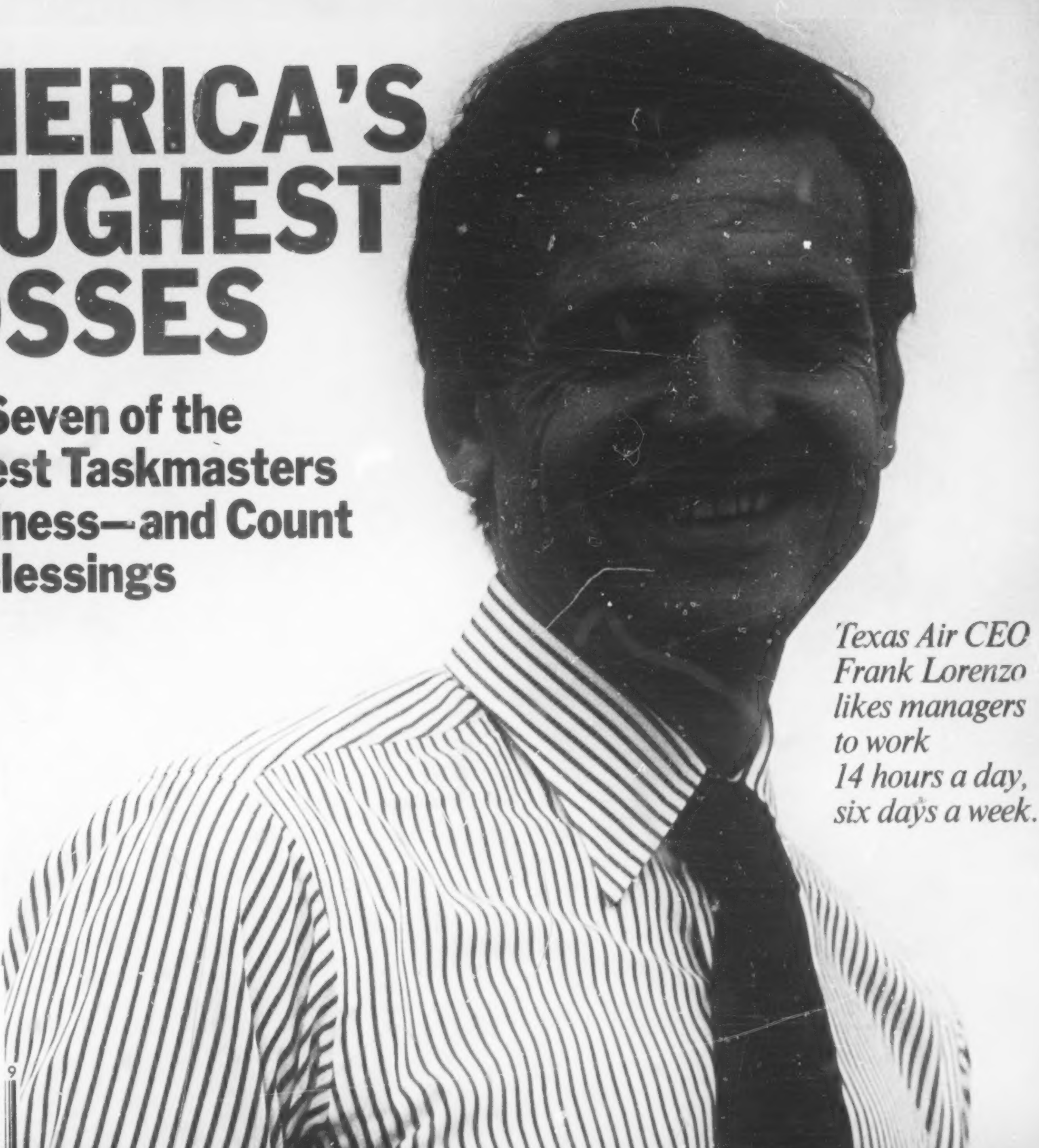
RETIREES' HEALTH COSTS • BONDHOLDERS' REVOLT • TOMORROW'S HOT STOCKS

RUARY 27, 1989
$3.50

FORTUNE

AMERICA'S TOUGHEST BOSSES

Meet Seven of the Steeliest Taskmasters in Business—and Count Your Blessings



Texas Air CEO Frank Lorenzo likes managers to work 14 hours a day, six days a week.

*1050**********5-DIGIT 20814
*S99ES520S91*5 Y520814 JUN91
SR1 CNGRSSN INFO SVC MD00MA**
4520 EAST-WEST HWY *018750
PL00151
BETHESDA MD 20814

FEBRUARY 27, 1989

FORTUNE

ABOVE: Photographer Rob Kinmonth caught Texas Air chief Frank Lorenzo staring down some of his pilots.

COVER: Kinmonth photographed Lorenzo at Houston Intercontinental Airport.

Lorenzo sometimes creates as much havoc among his crew as he creates among the competition.

COVER STORY/PAGE 40

MANAGING/Cover Story

AMERICA'S TOUGHEST BOSSES 40

One pulled the pin on a dummy hand grenade in a meeting—to see who would flinch. Another is a master of personal invective. Another tells middle managers not to support their superiors' plans. They're from all sorts of industries—airlines, banking, software—and have different styles. Most are successful, some aren't. They have this in common: They are not a lot of fun to work for. *by Peter Nulty*

LOOKING AHEAD

THE KILLER COST STALKING BUSINESS 58

Without paying much attention, companies made rich health-benefit promises to retirees—and their families. Consider Fred, a hypothetical young-at-heart 60-year-old with a 30-year-old wife and new baby. That adds up to 88 years of medical benefits. And Fred won't work one more hour for the company. *by Carol J. Loomis*

CEO POLL

NO MORE HEALTH CARE ON THE HOUSE 71

Chief executives think they have no choice but to trim runaway benefits. *by Alan Farnham*

CORPORATE PERFORMANCE

HOT COMPANY, WARM CULTURE 74

The folks who run Herman Miller Inc., the fastest-growing office furniture maker, credit much of their success to treating their workers right—even when times are tough. *by Kenneth Labich*

COMPANIES TO WATCH 80

Stolt Tankers & Terminals has mastered the tricky task of transporting bulk liquids. Plus: United Tote, Current Trends Productions, and North Hills Electronics. *by Julianne Slovak*

MONEY & MARKETS

THE BONDHOLDERS' COLD NEW WORLD 83

Screwing owners of bonds is the very stuff that LBOs are made of. Now bondholders are screaming. With Met Life suing RJR Nabisco, the courts will decide. *by Gary Hector*

VOL. 119, NO. 5

"The more stocks rise while the Fed is tightening, the more anxious I get."

PAGE 29

"I won't deny that I know how to chew ass."

PAGE 40

"For me, $25,000 after taxes wouldn't cover one stay in the hospital."

PAGE 58

"If every company were managed like Herman Miller, we would not be concerned about the Japanese right now."

PAGE 74

"To get his goat, they periodically threw out his mail."

PAGE 105

"I had to win the battle, or my life and my family's life would be shattered."

PAGE 110

TRADE

EXPORT BARRIERS THE U.S. HATES MOST 88

This is the year America gets serious about twisting arms. Fair enough—except that the U.S. ought not be too pious. *by Rahul Jacob*

TECHNOLOGY

COMPUTERS THAT THINK LIKE PEOPLE 90

Organized like brain cells, neural networks could become the most powerful form of artificial intelligence. And you can set one up on your own personal computer. *by Brian O'Reilly*

THE WORLD

WHY THERE'S STILL PROMISE IN CHINA 95

Inflation and shortages have rattled the Capitalist Roaders in Beijing, but they're not making a U-turn. This is no time for Western companies to pull out. *by Ford S. Worthy*

SERVICES

WHAT GOES ON IN YOUR MAILROOM? 105

Here's what to do about deep-sixed mailbags, overstamped letters, and other antics costing companies millions. *by Alan Farnham*

BOOK EXCERPT

HOW I FOUGHT OFF THE RAIDERS 110

In a new book that's bound to stir controversy, the chairman of ITT tells the inside story of a major takeover attempt. He also proposes eight ways to curb predators. *by Rand V. Araskog*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 8

Drexel fights to keep its stars, what's up—and down—in Japan, how CEOs relax, the junk fax glut, flying down to Rio—off price, and more.

FORTUNE FORECAST

Consumers will keep spending, but with a little less gusto. *by Maureen F. Allyn* 25

PERSONAL INVESTING 29

How to find small, flourishing companies before the big boys do. *by Andrew Evan Serwer*

Also: A new way to look at defense stocks and Portfolio Talk with Edward Hyman Jr., vice chairman of C.J. Lawrence Morgan Grenfell.

FORTUNE PEOPLE 121

ON THE RISE 122

OTHER VOICES 125

Louis Lowenstein argues that it's time to regulate the Wall Street casino and two Hoover Institution experts propose a national lottery.

BOOKS & IDEAS 129

Peter Lynch, builder of the superstar Magellan fund, has written one of the most sensible investment guides ever. *by Andrew Evan Serwer*

KEEPING UP *by Daniel Seligman* 133

LETTERS TO FORTUNE 135

August Busch, the UAW's Donald Ephlin, and some gossip from Bentonville, Arkansas.

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, John J. Curran, Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, California), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Bill Saporito, Lenore Schiff, Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John Huey, John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Alan Farnham, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Stephen Madden, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo)
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Todd James, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Karen Andrews, Charles J. Attardi, Leslie Brenner, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, George J. Habit, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Haire
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

GABE PALACIO

Writer Nulty and reporter Nickel: taming the tough

AMERICANS have long held a fascination for tough guys—George Patton, Humphrey Bogart, you know the type—and our cover stories on America's toughest bosses have been among our best-read features. Right now in business that fascination is stronger than ever; in an era of cutbacks and hold-downs, many companies crave hard-edged leaders. Choosing among them all for this issue's cover story (page 40) was tougher than for our previous pursuits in 1980 and 1984. Writer Peter Nulty and reporter Karen Nickel spent three months at it, interviewing the bosses, their past and present associates, security analysts, and management consultants.

ROBIN MOYER

Asian expert Worthy

Some of the toughest CEOs had an unnerving habit of coming on like pussycats in person. Banker Hugh McColl, boss of NCNB, confessed to Nickel, "I'm actually quite afraid of journalists." Carl Reichardt, chairman of Wells Fargo, called out as Nulty left his office, "When you sit down to write, think of my mother—she's 80!"

Others more than confirmed their reputation. Jim Manzi, chairman of Lotus Development, the computer software firm, seemed "incredibly quiet," says Nulty, but he had a reputation for being as judgmental as he was brilliant. "I had heard he liked to use the word 'stupid' a lot. He used that word with me four times."

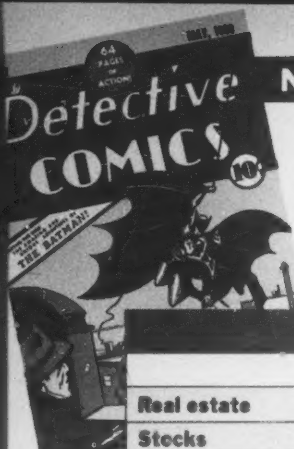
Nulty himself is a self-confessed softie. With a master's degree in international affairs from Columbia, he came to FORTUNE in 1976 after writing a newsletter from Washington, D.C., on Middle Eastern affairs. "I'm definitely not tough," he says. "I can't ride people, and the closest I've come to running an organization was when I managed a dining club at Wesleyan University." All right, but his editors can tell you that Nulty is properly and impressively tough-minded when making journalistic judgments.

One of the big stories of our time is the triumph of capitalism and the demise of socialism almost everywhere. That is certainly true in most of Asia, and our Southeast Asian editor, Ford Worthy, has just returned from China with a story (page 95) about that vast nation's twisting journey into capitalism. He concludes that although the Chinese Communists are taking some backward steps, they are not retreating from their desire to introduce market forces into their economy—and this is no time for Western companies to be pulling back.

In Worthy's vast territory, many countries are fast industrializing, offering both fresh competition and grand new markets for the West. Says Worthy, who has been on his beat since June: "These are the stories that we will be telling, stories immediately relevant not only to Americans but also to Europeans and Asians—to everyone."

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259) Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President, Michael J. Klingensmith, Treasurer, Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97, Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, FL 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-541-1000. Subscribers to FORTUNE prior to January 1, 1989 receive the magazine from the Time Inc. Magazine Company, as agent of Time Inc. for such purposes. © 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company.



COPYRIGHT © 1939, 1966 DC COMICS INC., USED WITH PERMISSION

PÉTRUS
1979
POMEROL

KENNETH CHEN

BEST INVESTMENTS

		1979	1989	GAIN
Real estate	Office space in L.A. (7,400 sq. ft.)	**$1 million**	**$3,500,000**	**250%**
Stocks	Hasbro	**$50,000**	**$4,143,500**	**8,187%**
	The Limited	**$50,000**	**$2,404,500**	**4,709%**
	Wal-Mart Stores	**$50,000**	**$2,345,500**	**4,591%**
Mutual funds	Magellan fund	**$50,000**	**$689,930**	**1,280%**
Rare coins	U.S. silver and copper, 1700-1900	**$37,500**	**$133,250**	**260%**
Collectibles	Detective Comics, complete series	**$20,728**	**$118,121**	**470%**
Wine	Château Pétrus, 40 cases	**$10,000**	**$130,000**	**1,200%**

SOURCES: ROULAC/DH&S; WILSHIRE ASSOCIATES; LIPPER ANALYTICAL SECURITIES; STACK'S RARE COIN CO.; OVERSTREET PUBLICATIONS; D. SOKOLIN CO.

JUST THINK . . .

■ Where were you in 1979? That was the year Iran seized 63 U.S. hostages and radiation seeped from the Three Mile Island nuclear plant. For the first time the price of gold eclipsed first $300 an ounce, and then $500. The Fed pushed its discount rate to an unheard-of 12%, and Lee Iacocca visited Washington to get a $1.5 billion loan for Chrysler. The Dow was in the 800s. Investments beckoned, as they always do. If you'd only spotted the ones above. They were among the best. – **William E. Sheeline**

HOW CEOs RELAX

■ Typical CEOs work 59 hours a week, as FORTUNE has reported. But according to a new book, *CEO: Who Gets to the Top in America*, only the gruffest chief executives think leisure is for wimps.

Reading is the No. 1 hobby, say authors Louis E. Boone, David L. Kurtz, and C. Patrick Fleenor, who interviewed more than 100 FORTUNE 500 CEOs to see how they spend their down time. CEOs may quote Iacocca, the authors found, but they are twice as likely to pick up fiction as nonfiction, particularly mystery and detective stories. They devour news and business magazines.

Golf and tennis rank first and second among preferred outdoor sports. Macho transportation industry executives are the most likely to work out. The least likely: CEOs in the medical products industry. Only 25% exercise regularly.

CEOs favor classical and easy-listening music. Seventeen percent like country best. Nine percent prefer opera. Only Wilson H. Taylor, 45, of **Cigna**, goes for rock-and-roll.

Alexander F. Giacco, head of **Himont**, producer of polypropylene, likes to make his own music. When home, he's in his music studio by 5 A.M. arranging compositions. A veteran jazz saxophonist and clarinetist, he's added the guitar, mandolin, banjo, and synthesizer to his repertoire. "Some mornings I play jazz," he says. "Others I'm in the mood for hillbilly tunes."

When Peter L. Scott of **Emhart** is not thinking about artificial intelligence or the consumer electronics his company produces, he's woodworking at his log-cabin retreat, laying parquet floors and carving window frames. Does it get his mind off the job? Says he: "If I think about business while I'm working with rotating saws, I'd lose a finger." **Tyco Laboratories**' John F. Fort climbs mountains. But one day on Mount McKinley, he says, "I thought, 'What a great time for a raider to show up.' The first thing I did when I came down was call the office." – **Julia Lieblich**

ARE YOU READY FOR JUNK FAX?

■ If **Mr. Fax** has your number, you'll be hearing from him soon—if you haven't already. Most nights, the Irvine, California, company launches a blitz of junk fax advertisements to facsimile machines across the country. At least 50 computers dial fax machine numbers and transmit messages of text and graphics to unwitting recipients. Worse, the recipient pays the 3 to 10 cents for the paper the ad uses—the very product Mr. Fax sells in his ads. Other firms advertise flowers and real estate. *All* of them tie up your fax machine.

Junk fax is still relatively new, but many think now is the time to stop it. State representatives in Oregon, Washington, Connecticut, and California are introducing bills that would outlaw the transmission of unsolicited advertising material on facsimile machines.

Mr. Fax President Steve Ridinger argues that a ban on junk fax would violate the First Amendment's guarantee of free speech. Besides, he says, the labor cost of opening and vetting junk mail is more than the

Tyco's John Fort scales New England's Mount Washington; Himont's Alexander Giacco blows a riff.

S. PETER LEWIS

ALAN DOROW

LOOKING AHEAD

THE KILLER COST STALKING BUSINESS

Without paying attention to what they were doing, companies made some splendid health-benefit promises to retirees. Here come the chickens home to roost. ■ *by Carol J. Loomis*

IMAGINE A RECENT FORTUNE 500 retiree named Fred, a prince of an employee over the years, but right now a corporate horror. Fred, 60, is covered by his company's health plan and has a life expectancy of 78; that's 18 years of health benefits. Young at heart, Fred has a new, 30-year-old wife who can expect to live to 80. She also comes under the company's health plan. So, gulp, does Fred Jr., 1 year old, whose coverage extends through the year he reaches 21. Add it up: 88 years of health benefits to be bestowed on a family that will be performing no work whatever for the company.

The example is obviously extreme. But when the subject is the promises that companies have made about health benefits, words of moderation mislead. All elements of this problem are enormous—the commitments, the expectations of employees, and potentially even their disappointments. Excruciatingly aware of what they have let themselves in for, companies are searching for roads of retreat. Some exist; most are tortuous.

Business is caught up, of course, in a national drama: The $550 billion the U.S. spent on health care last year amounted to nearly 11.5% of GNP, far more than in other industrialized countries. Costs are out of control, having risen since 1980 at a 10.5% annual rate. Many companies would kill to be so lucky. In 1987, General Motors' U.S. health care costs rose by 32%, to nearly $3 billion. Last year, says a consultant, the rise was again "horrendo."

The nation meanwhile equivocates about health costs, clamoring that they be contained yet demanding the easy availability of quality care. But no one wants to write the checks—neither the government, nor business, nor the patients.

The corporate obsession of the moment is retiree benefits, which around 70% of all large companies provide. In one way, these costs are no more than the tip of the iceberg: Typically, a corporation's health expenditures for active employees exceed those for retirees. But the actives *produce* and the retirees do not. Many, like Fred, are under 65 and prodigiously expensive to cover, since they do not yet qualify for Medicare. All those active employees, furthermore, are themselves marching toward retirement in cadence with a rapidly aging population. By the year 2020 or so the demographic profile of the entire nation is expected to match Florida's today: 18% of the population will be over 65.

These facts spell dollars, tons of them, and that reality should long ago have made managers fixated about their retiree costs. But in truth, most slumbered until shocked awake by accounting. Up to now, nearly all corporations have reported their retiree payments as the cash went out the door. But in the offing are new rules that would require companies to estimate all they will pay in the future, charge these obligations to their income statements, and recognize them as a liability on their balance sheets.

The obligations will be huge. One conservative estimate, by the Employee Benefit Research Institute, a nonpartisan, nonprofit organization in Washington, puts the present value of this liability, for all private employers, at $169 billion. Other estimates run as high as $2 trillion, not far below all the liabilities that nonfinancial corporations carry on their books. This vast discrepancy suggests the difficulty of pulling the problem into focus. But even the $169 billion figure implies that retiree health care costs will mangle many companies.

This problem also has a long tail, threatening to wrap itself around just about everybody in the country. Companies that provide retiree benefits feel compelled to attack this cost. But the moral and legal difficulties of cutting benefits for existing retirees have caused many companies to concentrate instead on reducing the benefits of their future retirees, a.k.a. their current employees. Many managements appear to detest this job—and all the other complexities of administering and policing health programs. A growing number yearn for some form of national health insurance to take over the task (see the FORTUNE 500/CNN Moneyline poll that follows).

MANY corporations edged into this bog during World War II, when wages were frozen and labor exacted health plans and other fringe benefits instead. Later, managements blithely extended like coverage to their non-unionized forces, retirees—and themselves. Health benefits have customarily been supremely egalitarian, linked to neither length of service nor salary.

That's one difference from pensions, among many. Most important, managements refused to index pensions to inflation. "Are you crazy?" they asked. "We can't afford that risk." But their health plans embraced indexing without ever using the word. Companies did not state their promises in terms of dollars—"We will give you X amounts to help defray your health costs"—but instead obligated themselves to cover their troops' medical bills, whatever these turned out to be.

They slipped into this awesome error partly because they viewed their health programs as short-term commitments subject to change, not long-term commitments like pensions. That thinking affected the financing of both. Wanting pension commitments to be solid, Washington required corporations to set aside funds to cover them at least partially, made contributions to these accounts tax deductible, and exempted their earnings from income tax. But the government did not prod employers to fund their health promises, nor did it shower them with tax incentives. As a result,

REPORTER ASSOCIATE *Alan Deutschman*

only a few companies have done any funding at all. The rest pay as they go.

The pension vs. health differences—Arnold Schwarzenegger vs. Danny DeVito—extend to financial reporting. Corporations have long treated pensions as a form of deferred compensation. They thus account for these on an accrual basis, actuarially recognizing the cost of an employee's pension over his working life. But they did not bite this bullet with their retiree health plans. Instead, they reported their cash costs and let it go at that.

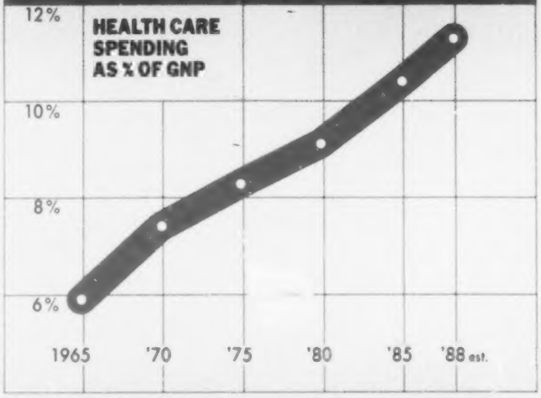
Into this haphazard world has now come the Financial Accounting Standards Board, saying, "These benefits, too, are a form of deferred compensation and thou shalt account for them in precisely that way." For retiree health benefits, then, it's out with pay-as-you-go reporting, in with accruals—which in virtually all cases will be higher.

THE NEW RULES will probably not apply until 1992 and may be modified as FASB exposes them to public and undoubtedly heated debate. But their shape can be anticipated. Corporations will first have to estimate future spending on health benefits for current and future retirees and all covered dependents. They must then discount these obligations to present value and begin charging them gradually to earnings.

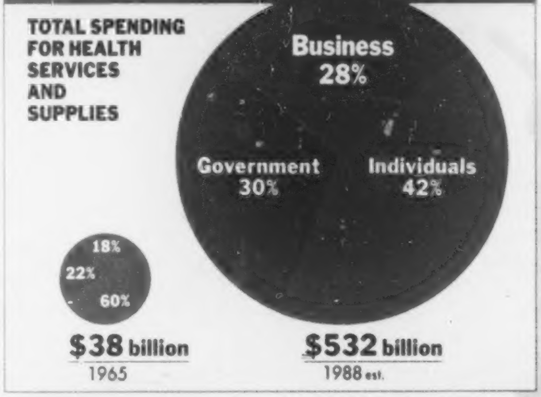
These bookkeeping charges, while not affecting the cash companies pay for medical bills, will inflict big damage on that telltale report card, the income statement. The toll will be especially heavy for perhaps 15 years, as companies recognize liabilities built up in the past. After that, the charges will continue to hurt as they are accrued year after year. Meanwhile, each company's balance sheet will display the "debt" owed to retirees, present and future.

Estimating these obligations will be only slightly easier than making the sun rise in the West and set in the East. Take the example of Mrs. Fred. The company responsible for her must, in effect, estimate what her medical costs will be over 50 years, taking into account price inflation (What will a hip replacement cost in 2030?), the frequency with which she may use medical services (One hip or two?), and the impact of technology (Will they be using gold by then for hips?). And what to make of Medicare, the primary provider for those over 65, with business picking up the extras? Lately Medicare, by extending catastrophic coverage to citizens over 65, has assumed

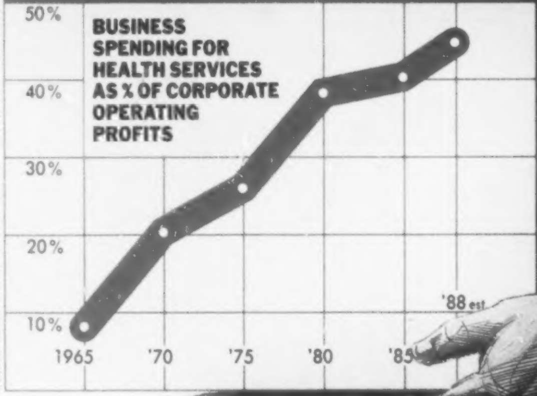
Health care costs have exploded . . .



. . . and business is paying a larger share . . .



. . . that's nearly half as big as operating profits



SOURCE: HEALTH CARE FINANCING ADMINISTRATION, DEPARTMENT OF COMMERCE

U.S. health costs are the fastest-rising rocket around, and business is paying for much of the fuel. Out of $532 billion spent last year, not including $18 billion for bricks and mortar, its share was $148 billion. Itemized: $106 billion for employees' bills, $27 billion for Medicare hospital insurance, $12 billion for workers' compensation, and $3 billion for in-house medical facilities.

KEN KERNS

He won

"Gus" Heck, now in a Florida retirement community, led a lawsuit against Bethlehem Steel over retiree health benefits.

billions in costs formerly borne by business. But will this munificence last—through next year, much less for 49 more?

All these matters will, of course, be dealt with actuarially, though by what warm bodies is not clear. Right now, says Diana Scott, the FASB's project manager on this case, "there just aren't enough actuaries to do all the measurements." Some managements, in any event, will be seeking almost any excuse to forecast slow growth for health costs. Outside consultants say many of their clients are gravitating toward 6.5% to 8.5%, telling themselves that the current out-of-control rates just can't continue. The numbers, in short, are going to be lousy. Says Timothy Lucas, FASB's staff director: "We think they will still be better than what you get now, which is zero."

THERE ARE SOME estimates around and they are ugly. Harold Dankner, a Coopers & Lybrand consultant, has been working with 25 companies that are testing FASB's rules. For many of this crowd, he says, the retiree accrual costs are going to run three to six times the retiree pay-as-you-go costs. The worst dollar blows—no surprise—are due to fall on companies that have demographically mature groups of people to support.

Consider steelmaker LTV, a company mired in bankruptcy since 1986. Retiree health benefits did not exactly put it there. But they were always a rumbling issue, now erupted. Last fall, anticipating FASB's rules, LTV made a massive accrual for retiree health costs, charging $2.3 billion to earnings. That charge says nothing about LTV's ability to pay these costs, which is probably dubious, nor does it clean the company's accrual slate. LTV was simply stating that at its measurement date, year-end 1987, it was estimating $2.3 billion to be the present value of its obligation to its existing retirees and to its active employees for the years they had worked so far.

LTV took this step, says controller William P. Twomey, because the liability is "real" and should be out on the table in the bankruptcy proceedings. But he also acknowledges that LTV had a unique opportunity to get this cost behind it, since it was merely turning its negative net worth into a redder shade of red. Healthier companies, he suspects, could not tolerate the hit, since they would fear the impact on their net worth or on loan covenants.

The average company will indeed string its accruals out. One of the few talking publicly about their financial effects is Du Pont. Currently the company provides health coverage for 100,000 employees, 71,000 retirees or their survivors, and 275,000 dependents, for a total of 446,000 people. Last year, when pretax profits were $3.6 billion, Du Pont's out-of-pocket health costs for this multitude were around $410 million, of which some $180 million went to retirees. But, says A. Herbert Nehrling Jr., director of employee benefits, the company thinks that retiree accruals could be from two to four times the retiree payouts, depending on its assumptions about future health costs. In other words, the retiree expenses hitting Du Pont's 1988 income statement could hypothetically have been $360 million to $720 million, instead of $180 million.

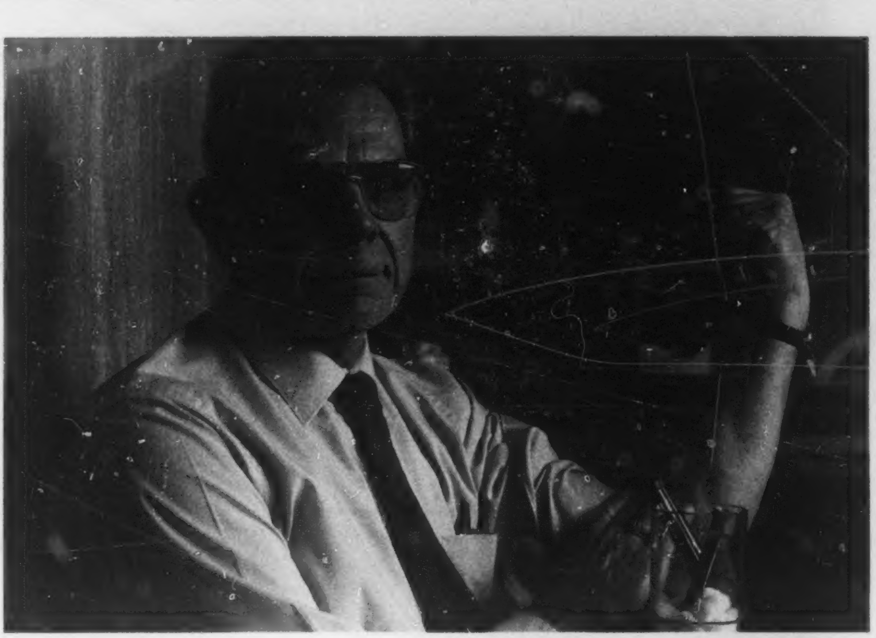
A House committee heard a still spookier estimate last fall from an AT&T actuary, Michael Gulotta, who was representing a coalition of large corporations. He said the average company was facing accruals that would be four to five times its retiree pay-as-you-go expense. Say AT&T is this "average" company. In 1987 its payouts were $319 million, which means its hypothetical accruals would have been $1.3 billion to $1.6 billion. Those are thunderous figures in relation to the company's 1987 pretax profits of $3.2 billion.

Furthermore, comparisons to *pretax*

He lost

Robert Musto, a basketball coach in retirement, sued his former employer, NLT Corp., and its acquirer, American General.

KATHERINE LAMBERT



ALAN D. LEVENSON

He's suing

Told he had leukemia, Charles Fletcher next heard his former employer, a KKR company, was stopping his medical coverage.

profits themselves somewhat mislead, since that pair-off implies that these accruals will be costs that can be fully "tax effected"—that is, partially offset on a company's income statement by a reduced provision for taxes. But because of still other accounting rules going into effect for taxes, that will not always be so. Instead, large chunks of the accruals will, in the vernacular, fall straight to the bottom line.

The jolt to be delivered to the securities markets is hard to judge. Some of this heavy news has surely been discounted. Certain security analysts may also play down the new rules as mere bookkeeping that has little immediate relevance to cash flow. On the other hand, these charges could heighten the earnings disparities within industries—between an oldster like Inland Steel, say, and an upstart like Nucor, which does not offer retiree benefits.

The strongest reason for expecting jolts is the paucity of information on the retiree issue. Inexplicably, many companies have not focused at all on what FASB's rules mean for them. "I am staggered by this," says Donald G. McKinnon of the Mercer Meidinger Hansen benefits consulting firm. Some companies even lack a breakdown of today's costs for employees, retirees, and dependents. If companies are themselves so uninformed, it is hard to believe the market has anticipated all the news to come.

MANY MANAGEMENTS are on the prowl for ways to shrink this liability drastically. They carry a legal tool: The fine print in their health-benefit plans customarily notes the right of the employer to change these at will. But the legalities are in the ring with other powerful contenders, including employee relations and humane considerations.

Most important, the fine print will not provide managements with an escape from the essential moral dilemma, which concerns what the retiree is truly owed. Lawsuits brought over this issue have shown that most employees who were promised retiree health benefits never dreamed that they could be forced to bear sharply increased portions of the cost. They thought of their benefits as an entitlement. I worked, they say, therefore I earned.

There you have what Dallas L. Salisbury, president of the Employee Benefit Research Institute, calls the "social consciousness issue." Those not yet retired, Salisbury says, have time to adjust to changes in coverage: "They have time to work longer, time to save." They also have leverage, including the ability to strike or take another job. But, says Salisbury, "someone who is 78 and already has bad health problems does not have the option of finding new savings to pay health insurance premiums he never thought he would have to pay."

With an adjustment for age, he could almost have been talking about Charles Fletcher, 59, a retired distribution manager of American Forest Products, a California company taken private in 1981 by Kohlberg Kravis Roberts and that firm's most notable financial disaster. In 1983, as AFP cut back operations, Fletcher received $22,500 in severance pay and round-tripped $13,000 of it to AFP in exchange, so he thought, for lifetime health insurance for himself and his wife. Then in early 1988 he learned he had leukemia.

Three months later KKR sold AFP to Georgia-Pacific. AFP's retirees, including Fletcher, received notice from AFP that their health insurance would be terminated, but that they would each be paid $25,000 as compensation. Says Fletcher: "Most are older and come under Medicare, so they accepted. But for me, after taxes, that wouldn't cover one stay in the hospital." So he bitterly refused the $25,000 and is suing AFP and KKR. A lawyer for those companies says a clause in Fletcher's health plan permits the cancellation.

Fletcher joins a swarm of retirees who have sued to try to block their employers from modifying or terminating their health plans. Neither side has scored a legal knockout. "The law is in flux," says Timothy Ryan Jr., of Washington's Pierson Ball & Dowd law firm, which tends to represent the defense. No case has reached the Supreme Court. In district courts, the retirees have often won. Says Ryan: "We can eliminate juries, but we can't eliminate the typical 68-year-old judge. He doesn't like these cases at all." On appeal, where even 68-year-olds may apply the law strictly, judgments for the retirees have often been reversed, on grounds that the fine print is there and that they have no rights of contract.

TWO LAWSUITS, with different verdicts, illuminate the texture of these cases. One action involved NLT Corp., a Nashville insurance company that had been acquired by another insurer, American General, which then sought to conform NLT's medical plan to its own. That meant NLT's retirees, who had been getting cost-free benefits, were hit for a share of the bill and they sued. The lead plaintiff—the kind you get in these cases—was a retired assistant secretary of NLT, Robert Musto, now 61, who had worked for the company 29 years.

continued

The other action involved Bethlehem Steel and its retired managers, whose Blue Cross/Blue Shield policies had until 1985 been paid for by the company. When it then tried to shift some of the cost to the retirees, they sued. Their chief was a Bethlehem veteran of 31 years, Carroll G. "Gus" Heck. Now 63, he had been second-in-command at the company's Buffalo plant.

In the courtrooms where these two disputes were aired, the companies leaned on clauses in their plans permitting changes. In each instance, the retirees said they knew nothing of those clauses and had been orally promised cost-free benefits. The witnesses included managers who had done the promising, sometimes in "exit" interviews in which people set to retire were reminded of their cost-free coverage. NLT, especially, had trumpeted the virtues of its health plan. A retired vice president told about the spiel he delivered at meetings of district managers: "I would hit the fact that they were going to have paid-up medical insurance, hospitalization insurance at no cost to them or their wives after retirement."

In the NLT case, a Nashville district judge, only 54 years old in this instance, came down for the retirees. The promise of benefits, he said indignantly, is not "a mere gratuity, but rather a legal right derived from a unilateral contract." Wrong, said the appeals court, in a decision just handed down. Oral promises, the court said, were outweighed by NLT's written declaration that it could change its plan. Musto and crew are considering an appeal to the Supreme Court.

In the Bethlehem case, a Buffalo district judge, 67, also found for the retirees, 18,000 of them. He dismissed the we-reserve-the-right language in Bethlehem's medical plans as not meaning much, in part because it had been carelessly omitted from two summary documents. To claim the oral representations made at the exit interviews didn't matter, the judge said, would mean that Bethlehem had perpetrated "an enormous fraud" upon the plaintiffs.

Talking appeal, Bethlehem instead settled. In exchange for certain improvements in other benefits, the retirees accepted cost sharing in their Blue Cross/Blue Shield coverage. "It was a win-win situation," says Heck's lawyer, Richard Moot of Buffalo's Moot & Sprague. Seeming to agree, Bethlehem attorney Kathleen Mills says the company wanted to settle because it disliked being "in an adversarial position" with its own people. Says she: "We didn't see that something we forced down their throats through a court decree was going to make for peace, happiness, and wondrous living."

"All of us in corporate America know it's time for us to get this escalating cost monster under control."

By now, many another company, inspecting this trunk of legal and moral problems, has decided its existing retirees must be treated gently. Or perhaps—you should pardon the expression—grandfathered while the employer moves on to cut the benefits of the next generation of retirees and the next.

A typical 58-year-old retiree runs up medical bills about double those of a 58-year-old still working.

JUST TO BEGIN the exercise, a company must analyze its health plans from stem to stern. What has it promised and to what extent can it back away? The answers may drive it to non-egalitarian "solutions." Consultant McKinnon says many companies are thinking of borrowing a years-of-service concept from pensions. That is, the less time an employee has worked, the less he gets in company-paid benefits when he retires. Pillsbury has already adopted such an approach.

International Paper took a strikingly different tack in a plan it announced to its non-unionized employees in mid-1987. In a stair-step arrangement, the benefits of people who had retired before January 1, 1983, were grandfathered—that is, left untouched. Those who had retired since that date were required to pay increased premiums, while those headed for pasture in the future were told they would then be paying still more. And, last, in a bit of lightning that makes IP a retiree revolutionary, employees hired after October 1, 1987, would not have "subsidized" retirement coverage at all.

Yes, says William Fuller, an IP spokesman, that means the company won't pay a cent toward coverage—though it might, for example, help its employees get group rates. Since the company never provided retiree benefits for its hourly paid employees, says Fuller, "over time—a long time—we will eliminate this expense."

IP's plan also requires more premiums from retirees under 65 than from those over, which puts the company on the leading edge of a national trend. Early retirees can be a medical disaster. In the first place, some have retired early because they were sick. Second, sick or well, they are "time rich," able to hang out at the doctor's. Third, as they near 65, they may decide that the optional surgery they were considering should be done on their company's bill, before they have to tangle with Medicare's complexities.

So a corporate retiree of, say, 58 may run up medical bills about double those of the 58-year-old still working. Says Stephen C. Caulfield, a Mercer Meidinger consultant: "I tell my clients that if the only issue is health costs, then they don't want to push people into early retirement." But that is seldom the only issue. Restructurings and leveraged buyouts and even the old stuff, like 30-and-out retirement programs, keep putting these kids on the street.

Happily for IP, it could make its changes without bargaining with its unions. No labor leader has doubts about the value of health benefits and many have leaped to defend them from attack. In 1986, just after LTV went into bankruptcy, it tried to stop paying retiree health costs. The United Steelworkers promptly called a work stoppage—and LTV began paying again. That same year, the Communications Workers of America struck New York Telephone for nine days over issues that included the company's proposal that retirees and current employees start sharing the cost of their health coverage. That issue flamed the longest. "At its end, this strike was about health care, pure and simple," says George Kohl, the CWA's director of research. New York Tel did not get cost sharing.

This year, as contracts for all of the Bell companies come up once more, Kohl says the issues will be "one and two, job security and health care." At Nynex, parent of New York Tel, management is also brooding about health, partly because it dreads FASB's rules. Vice chairman William Burns says progress just has to be made on the union front: "All of us in corporate America know it's time for us to get this escalating cost monster under control."

continued

When it comes to room service, the Prince never sleeps.

At Prince Hotels, our 24-hour room service awaits you with extraordinary cuisine and courtesy, no matter what hour you arrive. And this is merely one of the great pleasures you will discover in the spirit of the Prince, at more than fifty outstanding hotels throughout Japan and around the world.

PRINCE HOTELS

U.S.A. 800-542-8686/CANADA 800-268-7677/NEW YORK 212-889-5928/LOS ANGELES 213-689-4800/
TORONTO 416-449-7882/VANCOUVER 604-733-3177

TARGET MARKETING WITH IMPACT

Now you can reach small numbers of your best customers or prospects with economy, efficiency and impact... in the pages of FORTUNE, TIME, LIFE and the International Editions.

Let us show you how our Personal Communication Insert Program can be put to work for your firm.

CSI
Special Programs
For The Magazines of
Time Incorporated

Bill Kenyon
45 East Putnam Avenue
Suite 104
Greenwich, Conn. 06830
203-625-9293

He touches the heart of the problem. Companies may induce employees to smarten up their purchases of medical services or may even restrict their choice of suppliers. But there will still be a big bill on the plate and somebody—the company or the employee—must pay. Most corporations do not enjoy shifting costs to their employees. But in the interests of shareholders, they are naturally going about the job. The employees are just as naturally resisting. This conflict, sharp even now, is apt to turn brutal as FASB's rules bear down.

SOME CORPORATIONS have meanwhile been seeking help from Washington, campaigning for tax legislation that would permit employers to fund health benefit plans much as they do pension plans. Congress thinks the objective admirable, but not the means of getting there. Because this program would increase corporate tax deductions, it would cut federal revenues. In a read-my-lips era, cuts are not in the cards.

Instead, business may find the tables turned. There is talk of legislation that would cap employers' ability to deduct health costs—perhaps through a per capita limit. Would corporations fight such a measure? Many clearly would. But some might like to make such a cap an excuse for cutting benefits and escaping their "indexed," open-ended promises. Says consultant Caulfield: "I wouldn't be surprised to see industry sit on its hands on this one."

Amazingly, business seems even to be questioning its fundamental beliefs about health. The idea of government-run national health insurance available to all used to be almost universally despised by corporations. But now—behold the irony!—they seem to have experienced a certain conversion. Says Willis Goldbeck, head of the Washington Business Group on Health, a nonprofit organization backed primarily by big companies: "I find more and more businessmen are frustrated with this whole bloody effort. They see managing health as a forever deal. And they say, 'I'm not really in that business. Maybe some sort of national health insurance would make sense.' " Other health experts confirm Goldbeck's findings. There is a shift in the winds and it is not minor.

Nonetheless, the hard gusts of the next few years are apt to swirl mostly around retirees and FASB's rules and precisely who is to pay for a bill we can't pin to the mat. Want a useful suggestion? Tell your kid to become an actuary. ■

FORTUNE 500 / CNN MONEYLINE CEO POLL

NO MORE HEALTH CARE ON THE HOUSE

The bosses who foot the bills for active and retired workers can't bear the increasing burden. Employees had better brace themselves: They're going to have to pay up. ■ *by Alan Farnham*

AMERICA'S TOP CEOs view rocketing health care costs as a drain on profits and a threat to the very competitiveness of U.S. industry. Health care consumes more than 11% of GNP—twice the bite it took 25 years ago and more than any other industrialized nation spends. Business's share of the nation's doctor bill has grown to a staggering 45% of operating profits. While not all executives agree on the cause of this illness, they seem united on treatment: An overwhelming majority have asked present or retired employees to shoulder more of the costs—and nearly as many plan further shifts in the future.

"Saving money isn't enough. You have to save money and make employees happy."

THOMAS FRIST JR.
Hospital Corp. of America

LAWRENCE BARNS

These are among the most striking results of the latest FORTUNE 500/CNN Moneyline CEO Poll. Clark Martire & Bartolomeo, an independent opinion research firm, conducted the survey from January 16 to 24. Respondents were 209 CEOs of FORTUNE 500 and Service 500 companies.

Edmund Pratt Jr., head of Pfizer, the pharmaceutical company, points out that employees who imagine health care to be free are unlikely to consume it wisely. He and fellow CEOs have pricked this bubble by requiring workers to pay part of health care costs. Says G. David Hurd, head of Principal Financial Group, a financial services company: "It's a philosophical thrust, to increase employee cost-consciousness."

Some CEOs feel cost sharing alone is not enough. "It puts the employee back into the decision-making process," agrees Thomas Frist Jr., head of Hospital Corp. of America, "and it has shown results. But we're still not satisfied. In April we'll be instituting a flexible benefits program."

Flex programs typically give employees several choices of how to spend their health care dollars: Traditional "unmanaged" plans let them pick their own doctors, while less expensive "managed" programs require them to use a specified group of doctors—often in a health maintenance organization (HMO)—with which the employer has negotiated favorable rates. Employees who pick the cheaper plans can spend their savings on other benefits, such as child care. Managed plans have spread rapidly and, according to the Health Insurance Association of America, account for 72% of all plans.

Richard Clarke of Pacific Gas & Electric uses a flex plan already. "Every option is priced," he says. "We're entering into contracts with doctors and care givers, including HMOs, where we can negotiate rates. With 27,000 employees, you have a lot of buying power." PG&E has also adopted fitness and diet programs, which Clarke calls "a fruit-and-granola exercise regime." He estimates that the company's health care changes saved $15 million in 1988.

"You could spend less on technology, but you'd spend a lot more burying people."

EDMUND PRATT JR.
Pfizer

Pratt had a powerful incentive to revise Pfizer's health plan: The company's insurer, Metropolitan Life, told him in 1987 that Pfizer's premium would rise 35%. Why? Pratt says Metropolitan explained it to him this way: "You guys are suckers." Pfizer was paying for many kinds of hospital costs from the first dollar. It now requires a $200 deductible—"a modest takeback," says Pratt, "but we got little negative reaction. You have to explain these changes to employees. I did a videotape." Pfizer's subsequent premiums increased far less.

Besides money, morale is at stake when a company starts fiddling with health care. Philip Lippincott, head of Scott Paper,

REPORTER ASSOCIATE *Patricia A. Langan*

Q Has your company in the past four years asked active employees or retirees to pay for more of their health costs?

A

Active employees and retirees	36%
Active employees only	46%
Retirees only	Less than 1%
Neither	17%

Q In the next four years do you anticipate asking active employees or retirees to pay for more of their health costs?

A

Active employees and retirees	40%
Active employees only	32%
Retirees only	1%
Neither	13%
Not sure	14%

"With 27,000 employees, you have a lot of buying power."

RICHARD CLARKE
Pacific Gas & Electric

thinks that how a company announces benefit changes to employees can determine whether those changes gain acceptance. "You must be fully open and candid—no hidden agendas," he says. "We test-marketed our changes, got people's reactions, then held employee meetings around box lunches to talk over specifics." Frist of HCA adds: "Saving money isn't enough. You have to save money *and* make the employees happy."

A minority of CEOs (17%) say they have not asked employees to pay any health care increase. Some companies in tight labor markets feel they must continue offering existing plans to stay competitive. Others intend to make changes but have not decided what to do.

More CEOs have been willing to put the bite on active employees than on the retired. But their reluctance to touch retirees begins to melt as they contemplate the future; 41% say that over the next four years they intend to ask them to pay more. Pfizer's Pratt has already bit both the active and retired. "Our plan gives us the legal right to do it," he notes. Not every company reserves that right, and the courts have questioned whether those that reserve it can exercise it.

How successful have CEOs been at curbing health care costs? Although more than three out of four feel they have had moderate success, only 8% rate their efforts "highly successful." Scott Paper's Lippincott says he hasn't found the savings he had hoped to capture. "It's like squeezing a balloon," he says—as soon as one cost shrinks, another bulges. Herbert Kelleher, chief of Southwest Airlines, says, "Our employees are concerned. They see rising costs as a threat to profitability."

Surprisingly, support for some form of national health coverage appears to be growing among the CEOs, a heavily Republican and conservative group according to past polls. A fifth said that they have grown friendlier to the idea of universal health insurance, and 6% recommended such a plan. Says Avram Goldberg, head of Stop & Shop Cos.: "I think we should explore the potentialities of the Canadian National Health Plan, as was recently advocated in the *New England Journal of Medicine*." A large majority of CEOs still oppose any substantial government program. Richard Zimmerman, head of Hershey Foods, speaks for them when he says, "Get the government involved and they'll just foul it up."

Q How would you rate your efforts to curb wasteful or excessive use of health services?

A

Highly successful	8%
Moderately successful	77%
Unsuccessful	11%

Q As employers' difficulties with health benefit programs have grown, has your interest in some sort of universal national health insurance plan increased?

A

No	79%
Yes	20%
Not sure	1%

Q If it were in your power to make any change in the U.S. health care system, what would it be?

A

Establish procedures to control or cut costs, such as guidelines for medical fees	38%
Require individuals to assume more of their health costs	15%
Impose limits on malpractice suits	7%
Require greater accountability by medical professionals and hospitals	7%
Adopt a universal national health plan	6%

Most CEOs favor a variety of strategies for making the present system work better. The most popular, mentioned by 38%, is establishing procedures to control or reduce costs, such as price guidelines for medical fees. John Tait, head of Penn Mutual Life Insurance, favors pegging fees to an index, perhaps the consumer price index. Pratt, however, cautions against too many restrictions on doctors, who happen to be customers of his: "We must resist the temptation to come down hard on health care providers, because some good doctors left England when they restricted their doctors too much." Scrimping on high technology won't work either, he says: "You could spend less on technology, but you'd spend a lot more burying people."

"Dying is as much a part of life as anything else."

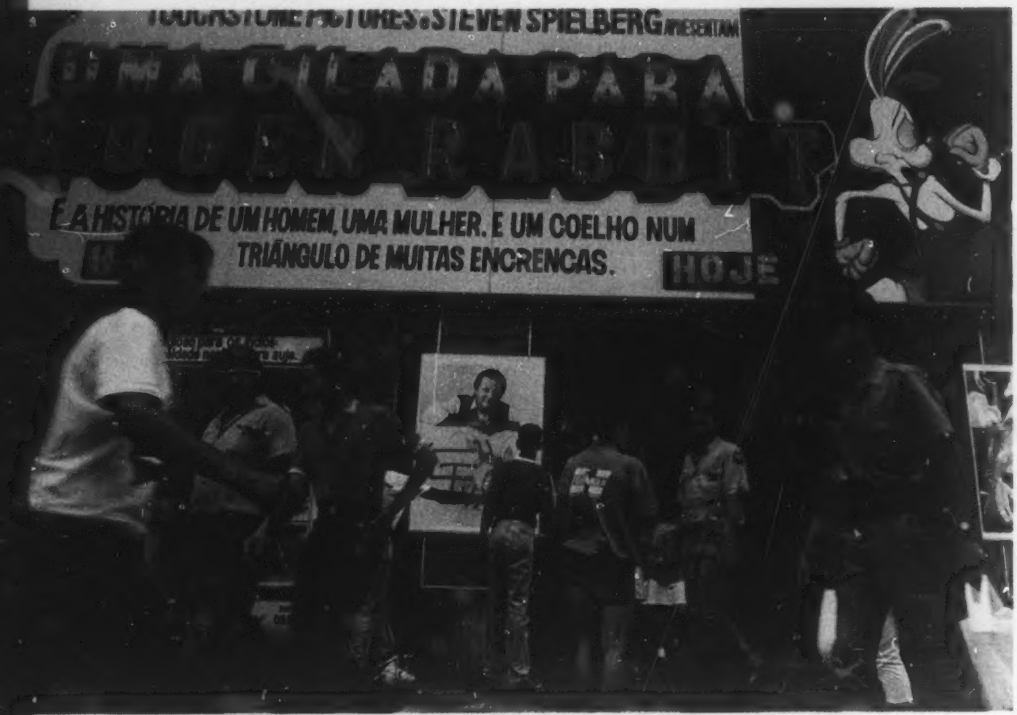
JOHN ROLLWAGEN
Cray Research

Eventually, some feel, Americans may have to change their attitudes about death. John Rollwagen, head of Cray Research, observes that, after all, "dying is as much a part of life as anything else." He questions whether using high-tech procedures on the elderly makes sense in a world of limited resources. A more rational system would stress prevention and natural healing, he says, and "We may have to face the fact that once you'd reached a certain age or level of infirmity, certain treatments might not be available to you." Bruce Seaton of American President Cos., a shipping line, adds, "Too much of total health costs are applied to the last year of life, yet we underspend on care for inner-city children. It's a political problem. The old have tremendous power."

CEOs are no youngsters, and it no doubt pains them to take medical benefits from employees past and present. But as most of them see it, the rising doctors' bill so threatens their corporate health that they have no choice but to operate.

EXPORT BARRIERS THE U.S. HATES MOST

This is the year that Uncle Sam gets earnest about twisting the arms of countries that perpetrate outrages. Fair enough—but America has plenty to be ashamed of too. ■ *by Rahul Jacob*


TOUCHSTONE PICTURES e STEVEN SPIELBERG APRESENTAM
UMA CILADA PARA ROGER RABBIT
E A HISTÓRIA DE UM HOMEM, UMA MULHER. E UM COELHO NUM TRIÂNGULO DE MUITAS ENCRENCAS.
HOJE

Want to show your movie in São Paulo? Sure, says Brazil, if you subsidize local filmmakers.

AN UNWIELDY paperback with a numbing title promises to be one of Washington's best-read books this spring. It isn't yet another serve-and-tattle White House memoir. It will tattle, but on America's trading partners. The 1989 edition of the *National Trade Estimate Report on Foreign Trade Barriers*, put out by the Office of the U.S. Trade Representative (USTR), has a new significance bestowed upon it by the 1988 Trade Act. The act requires the USTR to submit the report to Congress by the end of April, pinpoint the barriers that cost the U.S. the most exports, and start dickering with the offending countries before summer. Recalcitrants will be vulnerable to retaliatory tariffs or bans.

REPORTER ASSOCIATE *Patricia A. Langan*

But why wait to get mad? The table opposite highlights barriers that anger U.S. industry the most, either because of their scope or because they are notably perverse. Many countries listed are leading perpetrators of widespread practices. The losses to the U.S., while the best available, are rough estimates.

Some people will doubtless have pet barriers they consider more outrageous. Others will wonder what the fuss is about. "Unfortunately, in today's trading system nothing seems outrageous anymore," says J. Michael Finger, the World Bank's chief of international economic research. While tariff barriers have declined through most of the postwar period, new nontariff forms of protectionism have been multiplying since the early 1970s. Says Columbia University economist Jagdish Bhagwati: "Only the foolish use tariffs these days."

The nontariff barrier's many devilish manifestations include import prohibitions, "voluntary" export restraints, restricted licensing, and the use of antidumping cases to bully trading partners. On volume alone, agriculture dominates the list. Many barriers have been around for decades, since agriculture was exempted from much of GATT's discipline, but new ones keep sprouting. In the current beef over beef, for example, the U.S. has a strong scientific case: The hormones Europeans object to are practically undetectable and were declared safe by U.N. health authorities in 1987.

The greatest distortions are the European Community's export subsidies and variable levies, which are duties equivalent to the difference between already inflated domestic support prices and world market prices. These hit efficient growers everywhere, since the Community's farmers dump their excess production on the world market with the help of generous export subsidies, depressing prices globally. But most other industrial countries also protect their farmers, the U.S. included. Japan's virtual ban on rice imports costs Japanese consumers an estimated $28 billion a year. The U.S. Rice Millers' Association claims that if even 10% of the Japanese market were opened to imports, the resulting lower prices would save the Japanese $6 billion annually and the U.S. would gain a $300 million share of the market.

Manufacturers get less help than farmers, but they get more than enough. Airbus Industrie might well never have flown without support for its member companies from Britain, France, West Germany, and

PHOTOGRAPH BY CLAUDIO EDINGER—GAMMA/LIAISON

Spain. The hottest seller, the technologically advanced A320, received an estimated $3.4 billion in government development money. Experts agree that the A320 wouldn't be the plane it is without the subsidies; they guess that, competing against a lesser plane, U.S. companies would have exported some $850 million more in 1988. Wolfgang Demisch, managing director of UBS Securities, thinks that the biggest long-term damage to U.S. planemakers will come from the loss of domestic sales.

TEN TERRIBLE TRICKS OF TRADE

PRODUCT	COUNTRIES	BARRIER	SALES LOST BY U.S. annual, estimated
Grain	European Community	Price supports, variable duties	$2.0 billion
Soybeans	European Community	Price supports	$1.4 billion
Rice	Japan	Ban	$300 million
Beef	European Community	Ban on growth hormones in livestock	$100 million
Commercial aircraft	Britain, France, W. Germany, Spain	Subsidies to Airbus Industrie	Over $850 million
Telecommunications equipment	European Community, S. Korea	Standards stacked against imports	No estimate
Telecommunications satellites	Japan	Ban on import by government agencies	No estimate
Pharmaceuticals	Argentina, Brazil	No patent protection	Over $110 million
Videocassettes, films	Brazil	Requirements to subsidize and market local films	Over $40 million
Computer software	Thailand	Poor patent protection	No estimate

One handy way to keep a product out is to make it hard to sell. The EC's postal and telecommunications administrations are developing harmonized standards for equipment. Guess who gets to sit out in the hall while specifications are drafted? "Buy national" policies already close the door to much American equipment, and the USTR fears that the new standards may further reduce the U.S.'s already low $500 million share of this $12-billion-a-year market. Policies that favor domestic suppliers exclude most imported equipment from the growing South Korean market.

A still more devious type of barrier coerces importers into subsidizing domestic competitors. Brazil requires foreign videocassette distributors to buy Brazilian film rights, copy the films, and market them. Movie theaters must set aside 140 days a year for domestic films, and foreign distributors have to turn 3.4% of their gross receipts over to Brazilian filmmakers.

Many countries impede imports through a form of piracy when they fail to observe others' patents and copyrights. Pharmaceuticals and software are especially vulnerable to buccaneers in Latin America and Asia. Last October the U.S. struck back at Brazil by imposing 100% tariffs on some $40 million in Brazilian exports—the amount that U.S. pharmaceutical and chemical companies have been losing there annually. Similar negligence in Argentina costs U.S. companies $70 million to $90 million a year. More recently, Thailand has lost an estimated $165 million of its duty-free trading privileges with the U.S. because of its laxity in protecting software and pharmaceutical patents.

The trade act gives the U.S. powerful new weapons for hitting back—too powerful, in fact, if they are used recklessly. "It's the trade equivalent of mutually assured destruction," says Fred Smith, president of the Competitive Enterprise Institute, a public interest group. "You hurt your consumers, and we'll hurt ours." U.S. quotas on textiles, autos, and steel, designed partly to compensate for perceived unfair practices abroad, cost consumers at home billions a year without producing any apparent improvement in the behavior of trading partners.

THE U.S. CANNOT afford to get too pious in any case. It is more sinned against than sinning, but pity the priest who enters a confessional with Uncle Sam's conscience; he will get an earful. U.S. automakers, spared the full force of Japanese competition for years and rolling in money, still can't get enough protection: Now they are agitating for a 25% tariff on imported vans and so-called sport utility vehicles.

A favorite U.S. tool is the use of antidumping and countervailing duties, instruments of fair trade, to harass more efficient foreign suppliers. Companies such as GE and Black & Decker say that domestic makers of commodity bearings, which are used in small motors, are operating at capacity and cannot fill new orders. Nevertheless, prodded by Torrington Co., a major U.S. supplier, the Commerce Department has reached a preliminary conclusion that manufacturers from nine other countries are selling in America for less than at home.

Threatening a dumping action often provides a lever for negotiating such "voluntary" export restraint agreements as steel quotas. Ironically, these restraints often hurt the U.S. more than the exporting country. Robert Crandall, an economist with the Brookings Institution, estimates that the auto restraints the Japanese agreed to in 1981 cost U.S. consumers $160,000 for every American job saved. The quotas also boosted profits on U.S. sales for Japanese automakers, helping them become still more formidable competitors.

The newest U.S. strategy is to ship protectionism abroad via so-called voluntary import expansions. Rather than demand that a trading partner liberalize rules for all comers, the time-honored way of seeking new business, the U.S. asks for specific market shares for its products. But that share has to come from somewhere. When America pressured South Korea to trim its mounting trade surplus in 1987, Korea simply switched some imports of agricultural products from more efficient producers in Argentina and China to the U.S. In the tit-for-tat world of trade barriers, the losers inevitably outnumber the winners.

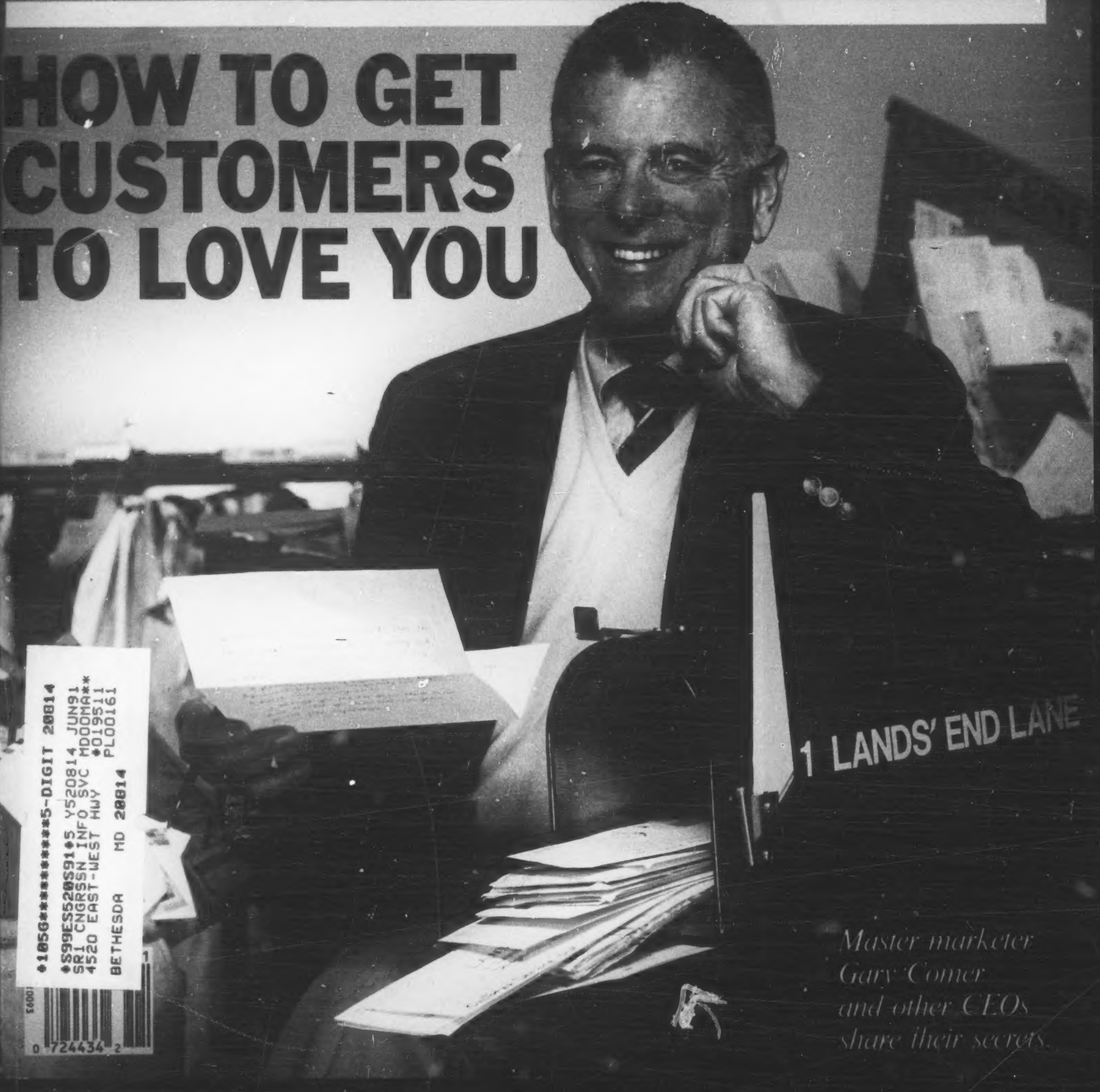
GM'S TASK AHEAD • SOFTWARE FOR CEOs • BUSINESS HALL OF FAME

C8900-1
3/16/89

MARCH 13, 1989
$3.50

FORTUNE

HOW TO GET CUSTOMERS TO LOVE YOU

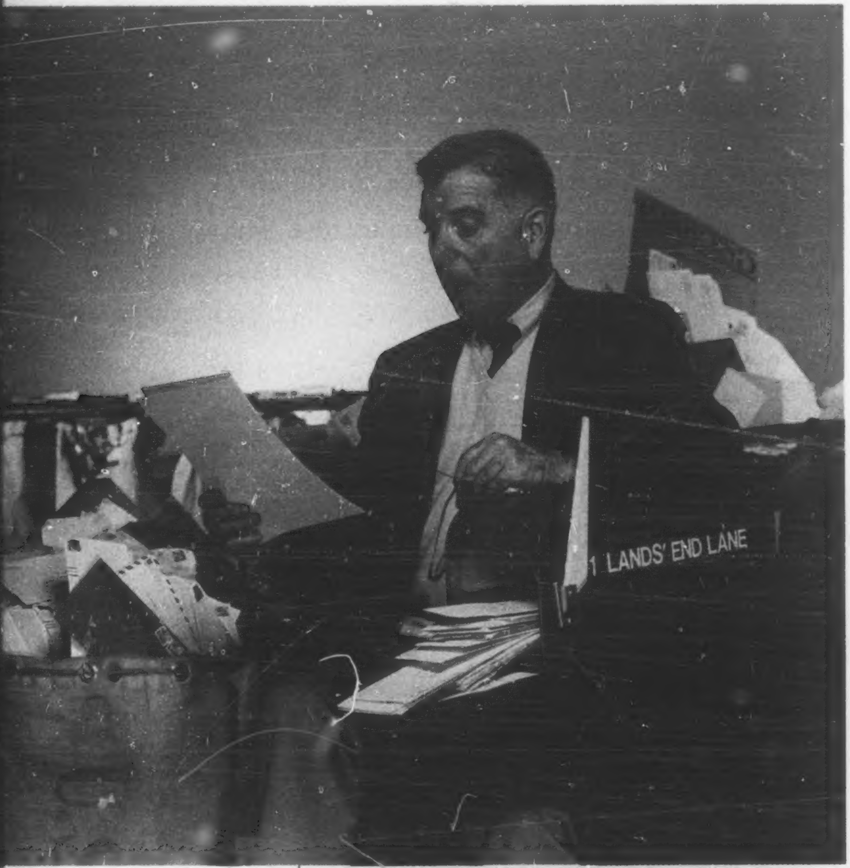


Master marketer Gary Comer and other CEOs share their secrets.

♦1056G*********5-DIGIT 20814
♦S99ES520SS91♦5 Y520814 JUN91
SRI CNGRSSN INFO SVC MDOOMA**
4520 EAST-WEST HWY ♦0195111
BETHESDA MD 20814 PL00161

MARCH 13, 1989

FORTUNE



COVER AND ABOVE: Andy Freeberg photographed Gary Comer at Lands' End headquarters in Dodgeville, Wisconsin.

SELLING/Cover Story

GETTING CUSTOMERS TO LOVE YOU 38

It takes more work than most managers think, but the payoff comes in building a loyal cadre of repeat buyers. Holding on to your customers costs one-fifth as much as acquiring new ones. You'll also know quickly whether the market wants your product. *by Patricia Sellers*

HOW LANDS' END COURTS UNSEEN CUSTOMERS 44

"I picked things that I liked, and over the years people interested in the same things gathered around. There's no great marketing scheme here." PAGE 38

CORPORATE PERFORMANCE

THE TASKS FACING GENERAL MOTORS 52

Costs are down, profits and quality are up. Now GM needs to win back American buyers, make the Saturn gamble pay off, and fine-tune Roger Smith's reorganization. *by Alex Taylor III*

GRAND MET'S RECIPE FOR PILLSBURY 61

These feisty Brits aim to put some yeast back in the Doughboy by cutting overhead, reheating brands, and rolling out new products. Once they digest their biggest acquisition, they'll be back for more. *by Richard I. Kirkland Jr.*

THE PUBLICAN AT BURGER KING 68

COMPANIES TO WATCH 73

CPI prospers taking photographs of kids in studios located in Sears stores. Plus: Martinair Holland, American Museum of Historical Documents, and Compumat. *by Julianne Slovak*

EXECUTIVE LIFE

AT LAST, SOFTWARE CEOs CAN USE 77

Executives are finally getting fast, clear information about what's happening in the bowels of their business. The new systems can change the way top managers work. *by Jeremy Main*

CEO POLL

HOLDING FIRM ON AFFIRMATIVE ACTION 87

Despite disappointments and a recent Supreme Court reversal, most top executives say they intend to press their company programs to recruit and train minorities. *by Alan Farnham*

VOL. 119, NO. 6

"When we went public, I said I wasn't going to run this company for short-term investors."

PAGE 38

"Come back in five years and see what I did."

PAGE 52

"Anybody incapable of punching me in the face is probably incapable of being a group executive for Grand Met."

PAGE 61

"You won't find a lot of retired generals, politicians, and actors on these boards. It's not a country club."

PAGE 91

"What makes recovery happen is small-business people willing to take risks."

PAGE 102

"It's our responsibility to tap the untapped, to raise the level of reserves, not only for Japan but for the world."

PAGE 124

MANAGING

LIFE AFTER DEBT: HOW LBOs DO IT 91

All managers of public companies can benefit from studying the practices of successful leveraged buyouts. Here are six ways to improve your business. *by Brett Duval Fromson*

WHAT LBOs REALLY DO TO R&D 98

THE ECONOMY

TEXAS FACES UP TO A TOUGHER FUTURE 102

Betting on the next gusher won't cut it any more for this state in turmoil. Now Texans must beef up schools, clean up taxes, and reform their court system. *by John Paul Newport Jr.*

THE NEW LOOK OF CAPITAL SPENDING 115

American companies are improving their investment decisionmaking and propelling the fastest rise in manufacturing productivity since World War II. *by Kate Ballen*

COMPETITION

NOW JAPAN IS PLUNGING INTO OIL 124

No longer content merely to import crude, the Japanese are starting to explore, produce, and buy large reserves. *by Carla Rapoport*

LAURELS

THE U.S. BUSINESS HALL OF FAME 130

This year's achievers include Boeing's T. A. Wilson, Intel's Robert N. Noyce, Emerson Electric's Wallace R. Persons, and McKinsey & Co.'s Marvin Bower. *by Walter Guzzardi*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 8

Bush's budget ballet, saving the thrifts, stars of the lecture circuit, those growing dividends, who will pay for the pollution cleanup, the return of Malcolm Bricklin, and more.

FORTUNE FORECAST 21

There's double trouble ahead from inflation and the budget. *by Vivian Brownstein*

PERSONAL INVESTING 25

Bond funds that play the whole fixed-income field for you. *by Joshua Mendes*

Also: Blossoming profits at a Tandy spinoff, warehouse clubs on a tear, and Portfolio Talk with newsletter publisher Gerald Perritt.

FORTUNE PEOPLE 137

Fuqua's personal school of business, Trump's second thoughts, and more. *by Mark Alpert*

ON THE RISE 140

BOOKS & IDEAS 143

Board Games shows how sometimes-bizarre court rulings practically ensure that every takeover attempt ends up in litigation—costing shareholders plenty. *by Walter Olson*

LETTERS TO FORTUNE 146

KEEPING UP 151

Your correspondent discovers the daisy chain phenomenon, asks who is really responsible for the S&L crisis, and more. *by Daniel Seligman*

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin
TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, John J. Curran, Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, California), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Bill Saporito, Lenore Schiff, Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John Huey, John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Alan Farnham, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo)
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Todd James, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Karen Andrews, Charles J. Attardi, Leslie Brenner, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, George J. Habit, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

ALAN DOROW

John Paul Newport Jr.: the return of the native

THERE'S ALWAYS BEEN a larger-than-life quality to Texas. Even its economic swings have been outsize—its oil-fueled boom more booming, its oil-glut bust more busted than in ordinary states that have never been independent, sovereign nations, as Texas once was. Now, amid the wrecked S&Ls and the vacant buildings, the first green signs of recovery are sprouting. Our story beginning on page 102 doesn't merely document that important development in the nation's third-largest economy. More important, in classic FORTUNE style it goes beyond the news to analyze what local experts say the state needs to do to make its recovery Texas-size.

Writer John Paul Newport Jr., born and bred in Fort Worth and appropriately tall in the saddle at 6-foot-4, comes to the story with missionary fervor. Perhaps that's a legacy from his theologian father, a top administrator of what Newport calls, in true Texas fashion, "the world's largest" Protestant seminary, Southwestern Baptist. Maybe it's only that you can take the journalist out of Texas, but not vice versa. Says Newport: "It's the one place in the world I can say I care about most."

It's also a place he knows in more—and quirkier—detail than most folks. As a reporter for the Fort Worth *Star-Telegram* before he came to FORTUNE, he wrote about rabbit breeders, pigeon fanciers, and goats at the Fort Worth Fat Stock Show, about canoeing from Fort Worth to Dallas, and—as an occasional obituary writer—about such characters as judges who dealt out frontier justice in the rough-and-ready Roy Bean fashion. He also won a John Hancock Award for excellence in business journalism for a series on the social impact of computers and new telecommunications technology.

His affection for his home state caused Harvard-educated Newport to approach this story in a most un-Texas-like manner. The more he found his native drawl getting thicker in dozens of interviews with prominent local business people, politicians, and economists, the more he forced himself not to get caught up in the wild optimism and overstated hopes that he often heard. He focuses not only on the recent gains but also on the myriad obstacles the recovery faces, from an obsolete tax system to a Hispanic population that needs the tools to make itself a richer asset. Only by dealing with problems it has been accustomed to ignore can the state achieve its grand potential. Says John Lawrence, who edited the story: "Now Texas has to build an economy the old-fashioned way, instead of expecting it all to come in a gush." That's a job for the state's fabled can-do spirit.

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President; Michael J. Klingensmith, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97. Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, FL 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-541-1000. © 1989 The Time Inc.

FORTUNE 500 / CNN MONEYLINE CEO POLL

HOLDING FIRM ON AFFIRMATIVE ACTION

Despite disappointments and a recent Supreme Court reversal, most top executives intend to press their company programs to recruit and train minorities.

■ *by Alan Farnham*

BY SOME YARDSTICKS, affirmative action could be judged a failure. Twenty-five years have passed since the two words entered the law's vocabulary, yet only one black leads a FORTUNE 500 or Service 500 company (Clifton Wharton Jr. of the Teachers Insurance & Annuity Association). A study of corporate vice presidents in 1985 by Korn/Ferry International, the executive search firm, concluded that less than 1% were minorities. After a decade of sawing away at affirmative action's Constitutional supports, the Supreme Court in January appeared to break off a buttress: The court struck down a Richmond, Virginia, law that set aside funds for minority-owned contractors. While the decision addresses only state and local government quotas, its message could influence private enterprises.

Despite court decisions and disheartening statistics, 42% of CEOs polled say they remain fully committed to affirmative action, 59% say they don't plan to change their established programs, and 68% characterize the effect of the programs on U.S. business as good, very good, or outstanding. These findings and others come from the latest FORTUNE 500/CNN Moneyline CEO Poll. Clark Martire & Bartolomeo, an independent opinion research firm, conducted the survey from February 1 to 8. Respondents were 202 CEOs of FORTUNE 500 and Service 500 companies.

HANS NEUMAN–WHEELER

"It's a very thin market in science and engineering graduates who are minorities."

ALLEN JACOBSON
3M

Q **The results of affirmative action programs in private U.S. enterprises have been:**

A

Outstanding	2%
Very good	17%
Good	49%
Fair	29%
Poor	2%
Not sure	1%

Does CEO support for affirmative action represent, as Dr. Johnson said of second marriages, a triumph of hope over experience? Not entirely. Employment statistics, undeniably depressing, tell less than a complete story. Corporate restructuring and the stock market crash have hurt minority employment as well. Both led to massive layoffs, and by federal law employers may consider job seniority but not race in cutting workers. Last hired, first fired; and the last hired are often minorities.

One-third of poll respondents say minority hires, because of their education and skill levels, tend to land in staff jobs, the first kind to go when companies squeeze. Says W. Thomas Stephens of Manville: "Because we cut back so drastically in the last six years, gains made in the Seventies were lost. We've had to start over."

Some CEOs draw courage from forms of progress that statistics cannot measure. Jess Hay of Lomas Financial, a mortgage banking and insurance company, sees the sweeping away of old prejudices, including the idea that some jobs are for men, others for women. W. W. Sprague Jr., head of Savannah Foods & Industries in Georgia, says: "I can remember in the late Sixties when our company canceled all company parties because there was too much tension mixing races. Now mixing is very natural." Like 88% of his peers, Sprague says his affirmative action program—which sets goals, not quotas—produces neither contention nor controversy. He declares, "We're not going to lower the level of our management to meet anybody's quota."

While nearly three-quarters of respondents do use goals or quotas, a significant minority (14%) use neither, hiring and promoting on merit alone. Trucking firm J.B. Hunt, with no affirmative-action program, says 25% of its drivers are black, Asian, or female. CEO Kirk Thompson calls quotas "ridiculous" and "a disincentive to the people who are your performers."

"The whole country is moving from being white, Anglo, and Protestant to polyglot."

MARION SANDLER
Golden West Financial

HELAINE MESSER

Close to half the CEOs (42%) say they have made a genuine effort to recruit minorities, but less than a quarter feel their efforts have produced substantial new talent. So why aren't they scrapping their programs? Even the most discouraged hope that past recruiting will pay off sometime in the future, as new minority hires become seasoned executives.

CEOs appear chastened by their experience with affirmative action. They express surprise and disappointment at how slowly progress has been made, and only 41% feel

REPORTER ASSOCIATE *Joan Viebranz*

"We're not going to lower the level of our management to meet anybody's quota."

W. W. SPRAGUE JR.
Savannah Foods & Industries

they have met their recruitment and hiring goals. They use words like "naive" to describe their early expectations. "In years past we were unrealistic," says David Swanson of Central Soya. "We tried to recruit right into middle management. But you can't just parachute them in. The pool of applicants was too small here in Midwestern agriculture."

Only 16% of the CEOs say they have had difficulty finding qualified applicants, but virtually all agree the applicant pool is shallower than they had feared. Nowhere is the shortage more acute than in engineering, computing, and the sciences; the most recent estimates show minorities earn only 3% of degrees in those areas. Says 3M's Allen Jacobson: "It's a very thin market in science and engineering graduates who are minorities. We can find most of those we need, but there's no surplus of them."

3M recruits from 75 colleges and universities and lends executives to professional associations that encourage minority participation in the sciences. It sends women scientists and technicians to schools to tell young girls the virtues of scientific careers. For such efforts, the winter issue of *U.S. Black Engineer* commends 3M for having one of the best minority-recruitment programs in U.S. industry.

Competition for qualified applicants breeds a variety of evils, including piracy: Almost half (48%) of all respondents complain that their best minority managers, people often trained and educated in-house, get pirated away by competitors. "It's a problem," admits Marion Sandler, head of California's Golden West Financial, though she says the problem has eased somewhat in recent years. "We'd have people calling our Oakland office, asking tellers if they were black. If the tellers said yes, they'd hire them sight unseen."

In the race to develop talent, 26% of CEOs complain of pressure to push minority managers ahead too fast. William Bourke of Reynolds Metals isn't among them. He feels minority managers are, if anything, not advanced fast enough. Says he: "Keep in mind we're in the capital of the South here, my friend—Richmond, Virginia. Most of our senior managers are Southern white males. There's a breakthrough mentality you have to work on." Since Bourke has as little patience for reverse discrimination as he has for discrimination itself, he commends the Supreme Court's January decision. He expects it will have no effect on Reynolds's program, since the company does not use quotas.

For now, the mortar binding CEOs to affirmative action—a compound of social conscience, fear, and self-interest—appears strong. Some CEOs believe fervently that the programs are the best way of righting past wrongs. Others half-heartedly endorse them because, like eating oatmeal, it's the right thing to do. Still others fear the penalties for backsliding, which can be sharp: General Motors, while admitting no wrongdoing, agreed in January to compensate a group of 10,000 current and former black employees who said GM had discriminated against them in promotion and hiring. Potential cost: $30 million or more.

The most enlightened CEOs see a diverse work force as a competitive advantage. For demographic reasons, 85% of new hires by the end of the Nineties will be women or black, Hispanic, and Asian men. Jobs will increase faster than workers available to fill them. Employers who want to seize future talent must learn to attract today's minorities. Beggars can't be bigots.

Marion Sandler of Golden West Financial puts it this way: "In the broad perspective, the whole country is moving away from being white, Anglo, and Protestant to polyglot, particularly in places like California, Colorado, Texas—places we do business. You have to recognize what's happening and be a part of it." For all minorities, practical necessity will open doors that never yielded to entreaty. ■

Q Which of the following statements comes closest to describing your own company's affirmative action activities?

A

We have affirmative action goals but no numerical quotas	54%
We have specific quotas for hiring and promoting	18%
We hire and promote on merit and talent alone	14%
Other	14%

Q If your company has an affirmative action program, which of the following statements describe your experience?

A

Minority managers get pirated away, thwarting our efforts	48%
We have met our goals in hiring and promoting minority managers	41%
Minority managers tend to land in a fairly small group of staff positions	35%
There has been a tendency to push the advancement of some minority management candidates too fast	26%
The program has produced substantial new talent for my company	22%
The program has produced contention and controversy	12%

Q What has been your company's recent experience with affirmative action, and how do you expect your policies to change?

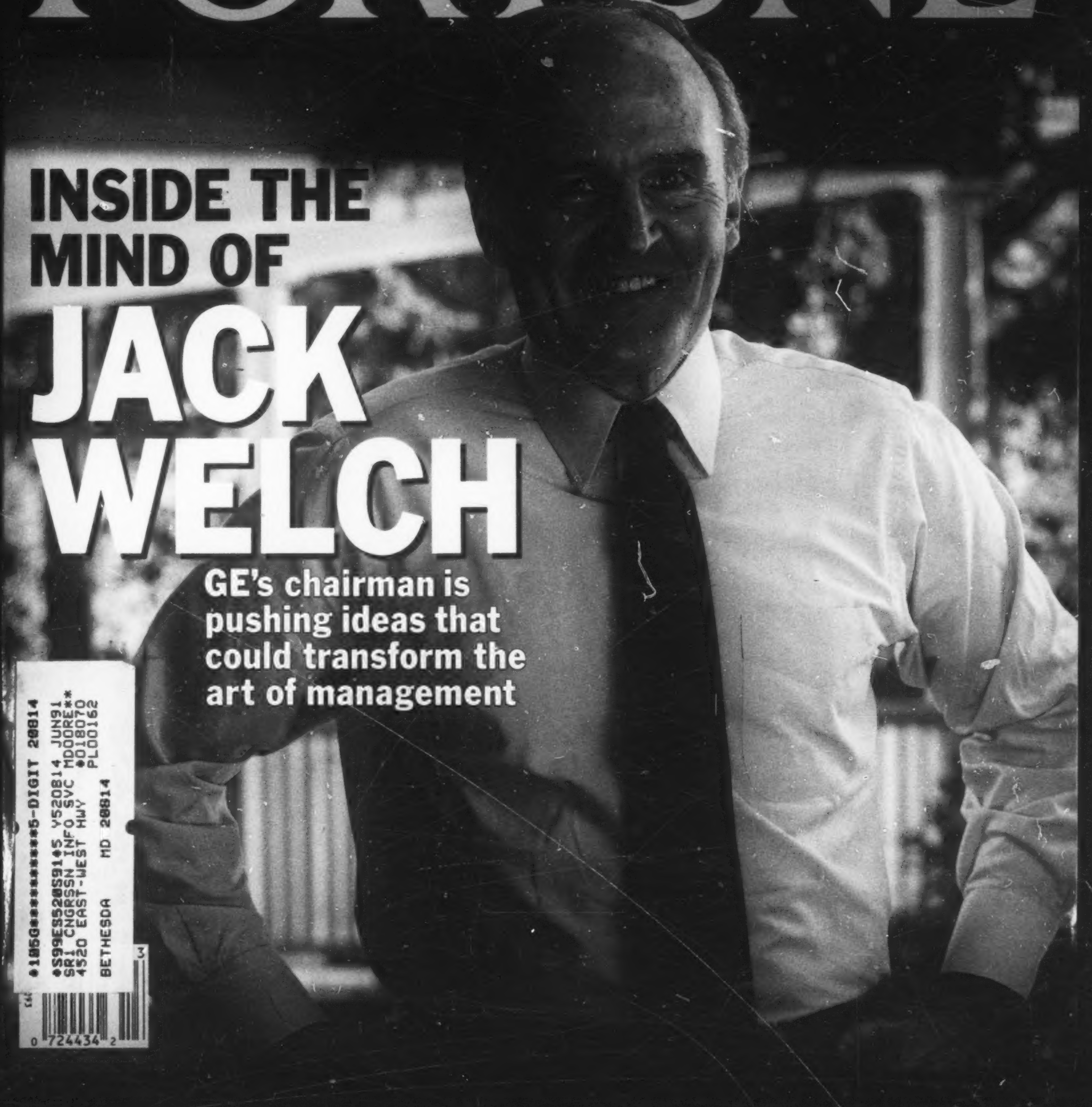
A

RECENT EXPERIENCE		EXPECTED CHANGES	
Have made a genuine recruiting effort	42%	Don't expect significant change	59%
Have had difficulty getting qualified people	16%	Will continue strong support of program	13%
Have rejected quotas	12%	Expect more effort to promote affirmative action	8%

■ YUPPIE BUYING TRENDS • SCULLEY ON SABBATICAL • HOUSING FOR ALL ■

MARCH 27, 1989
$3.50

FORTUNE



INSIDE THE MIND OF JACK WELCH

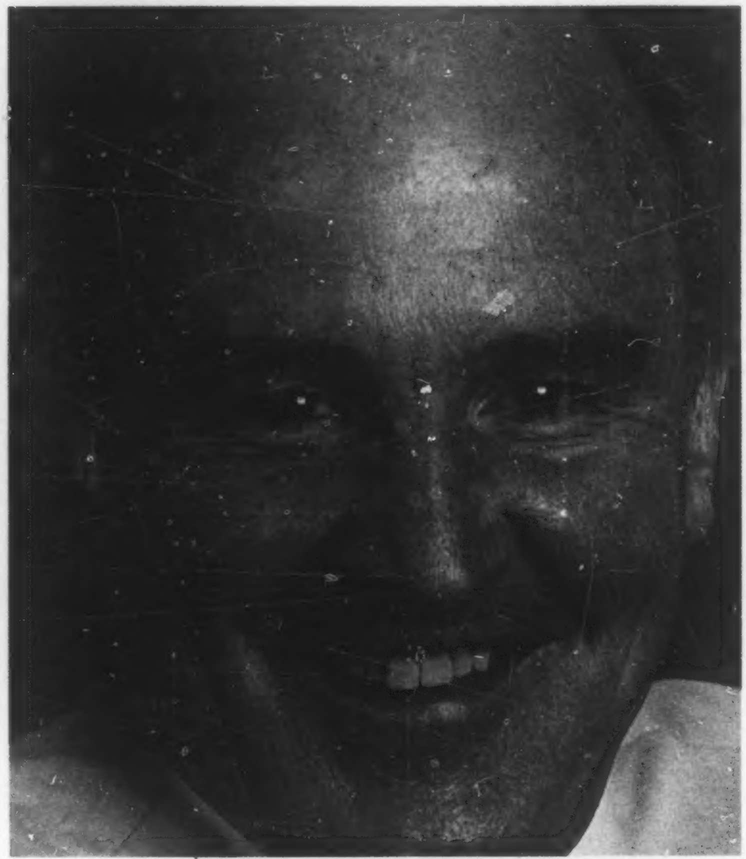
GE's chairman is pushing ideas that could transform the art of management

*105G**********5-DIGIT 20814
*S99ES520S91*5 Y520814 JUN91
SR1 CNGRSSN INFO SVC MD00RE**
4520 EAST-WEST HWY *0180070
PL00162
BETHESDA MD 20814
3
0 724434 2

MARCH 27, 1989

FORTUNE

"If someone tells me, 'I'm working 90 hours a week,' I say, 'You're doing something terribly wrong.' *I* go skiing." COVER STORY/PAGE 38



COVER AND ABOVE: Joe McNally photographed Jack Welch at GE's headquarters in Fairfield, Connecticut.

MANAGING/Cover Story

INSIDE THE MIND OF JACK WELCH 38

Fresh from his radical restructuring of General Electric, the controversial chief executive is putting the same fervor behind an attack on corporate bureaucracy. He wants to "empower" and "liberate" middle managers. His ideas are simple: Face reality. Communicate candidly. Control your own destiny. Put together, however, they could rewrite the textbook on how to manage a major company. *by Stratford P. Sherman*

THE SOCIETY

WHAT DO WE OWE TO THE ELDERLY? 54

The graying of America presents hard questions about who's going to pay—in time and money—the rising bill for taking care of the old. The problem has put everybody in a bind: taxpayers, the aging, their children. *by Lee Smith*

THE SENIOR BOOM: HOW IT WILL CHANGE AMERICA 62

COMPETITION

YOUR RIVALS CAN BE YOUR ALLIES 66

U.S. companies are fast learning how to team up with foreign competitors to crack markets and acquire technology. Some are joining erstwhile enemies from Japan. *by Louis Kraar*

EXECUTIVE LIFE

JOHN SCULLEY ON SABBATICAL 79

Try taking a break, says the man from Apple. He tells how, on a nine-week getaway to Maine, he designed a barn, hatched a companywide reorganization, and decided that banning business meetings would boost American productivity.

POLITICS & POLICY

HOUSING POLICY NEEDS A REHAB 84

Washington spends poorly on the poor, and local governments block affordable homes for the middle class. Housing is a problem, all right, but it is not a crisis. Here's a blueprint for changes in laws and spending that can lead to decent housing for everyone. *by Louis S. Richman*

VOL. 119, NO. 7

"The commandment says, 'Honor thy father and thy mother.' It doesn't say anything about anyone else."

PAGE 54

"I'm a mere mortal."

PAGE 79

"Instead of gunshots, I hear birds singing."

PAGE 84

"I can't say I'd done it all, but I had come darn close to doing an awful lot of it."

PAGE 94

"I recognized that we politicians don't provide the jobs."

PAGE 106

"Mr. Levine, I think you're pathetic."

PAGE 151

CORPORATE PERFORMANCE

BILL AGEE GETS A SECOND CHANCE 94

Bulldozed by bad projects and worse management, Morrison Knudsen called on the former Bendix chief executive to help rebuild its construction business. *by Christopher Knowlton*

INTEL'S PLAN FOR STAYING ON TOP 98

The company developed the chips that act as the brains of most personal computers. Powerful workstations now challenge PCs, but Intel aims to own that market too. *by Carrie Gottlieb*

COMPANIES TO WATCH 104

CITIES

HOW BUSINESS BOSSES SAVED A SICK CITY 106

Could this happen in your town? With local government in shambles, CEOs took charge of Cleveland's fate. *by Myron Magnet*

MONEY & MARKETS

THE NEW GAME IN LIFE INSURANCE 140

Upstarts in the protection racket have forced old-line players to offer policies that are as much investment as insurance. That makes for happy customers and sad profits. *by Terence Paré*

SELLING

YUPPIE SPENDING GETS SERIOUS 147

Those conspicuous consumers are settling down, eating in, stashing cash in quality goods, and even giving to charity. *by Faye Rice*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 8

Airline safety, Japanese angels on Broadway, IBM wins a round in the PC wars, CEOs speak up for 4-year-olds, betting on art, baseball cards, a wish comes true for the Ford cousins, and more.

FORTUNE FORECAST 19

After a hot start, a cooling trend is likely. With folks saving more and the Fed being cautious, the risk for the economy may be more on the downside than the upside. *by Maureen F. Allyn*

PERSONAL INVESTING 23

Fast-track companies whose stocks have been sidetracked. *by Andrew Kupfer*

Also: Five deadly sins to avoid when investing for retirement and Portfolio Talk with money manager Mario Gabelli.

FORTUNE PEOPLE 151

A woman breaking some ground at General Electric, a money manager with a movie-making hobby, and more. *by Mark Alpert*

ON THE RISE 152

LETTERS TO FORTUNE 155

Jay Pritzker on Rand Araskog's "ghosts," Jerry Seslowe waiting for a call, and what a 2-year-old sees when she looks at Frank Lorenzo.

KEEPING UP 163

The next big cause may affect your eating habits, some thoughts about catching liars, a taxpayer's diary, and more. *by Daniel Seligman*

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, John J. Curran, Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, California), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Bill Saporito, Lenore Schiff, Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John Huey, John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Alan Farnham, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo)
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Todd James, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Karen Andrews, Charles J. Attardi, Leslie Brenner, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

ANDY FREEBERG

Sherman takes a pause on the march to a manuscript.

JUST THE FACTS, MA'AM. American readers may well think of Joe Friday's line when they come upon the sometimes pompous pronouncements of journalists. But which facts? Held at a distance by the chief executives who shape American enterprise, most journalists must content themselves with describing the actions of corporate chieftains without much insight into the thoughts and emotions that drive them. Not so Strat Sherman. In this issue's cover story (page 38), Sherman takes you inside the mind of General Electric's controversial boss Jack Welch, whose powerful personality and unconventional ideas have the potential to transform the art of management.

Welch was wary at first, and understandably so. In eight years as chairman, he has gotten plenty of critical press for scything away over 100,000 jobs—one-quarter of GE's total. Though he had met Sherman twice before, he asked for an off-the-record lunch to look him in the eye and discuss ground rules. The discussion must have gone well. Welch agreed that no topic would be off limits, Sherman promised to be fair, and the two began what turned out to be five intense, two-hour interviews.

For perspective, Sherman and reporter Cynthia Hutton spoke with some 65 present and former GE executives, competitors, business consultants, and Welch's friends and critics. But the most telling material came from the man himself: "I was struck by the coherence of his thought and action," says Sherman. "He's also highly emotional and up-front about it. For all his reputation for toughness, he would get misty-eyed talking about his mother."

In the end Sherman, who has probably interviewed over 100 CEOs in his career at FORTUNE, concluded: "He's the best I've met so far. He's got the ideas and he's got the guts."

Also in this issue you will find articles addressing two of today's more compelling social questions. Washington bureau chief Lee Smith tackles the implications of our expanding elderly population and looks at how—and how much—we should pay for their care. Writer Louis Richman analyzes the equally vexing problem of how to supply affordable homes for the poor and middle class. In both cases, many people contend that huge increases in federal spending are the answer. The authors take a different view. For how we can meet these challenges without unacceptably burdening the taxpayer, see "What Do We Owe to the Elderly?" (page 54) and "Housing Policy Needs a Rehab" (page 84).

JOHN ABBOTT

Louis Richman

DICK HALSTEAD

Lee Smith

Allan Demaree
EXECUTIVE EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President; Michael J. Klingensmith, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97. Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, FL 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-541-1000. © 1989 The Time Inc.

nursing home director: "They'd rather work at McDonald's and hire a kid to work for them in the nursing home." Well, why not? Another solution might be to offer retirees an insurance policy of sorts. For every hour they work in a nursing home, or take care of someone confined to her own home, they would get credits entitling them to free care should they need it.

Aging is a difficult, disturbing idea for most Americans. Perhaps that's because the society has so long focused on youth, or because the U.S. is so prosperous and medically sophisticated that anyone's inevitable decline is seen as some kind of failure. Even with the best of wills, there are limits to what the rest of society can do—either publicly or privately—for its aged citizens. Dylan Thomas had some good advice about not going gently into that good night. If the elderly can take that to heart and stop thinking of the burden of old age as somebody else's problem, there's no telling what imaginative remedies they will produce. ■

THE SENIOR BOOM: HOW IT WILL CHANGE AMERICA

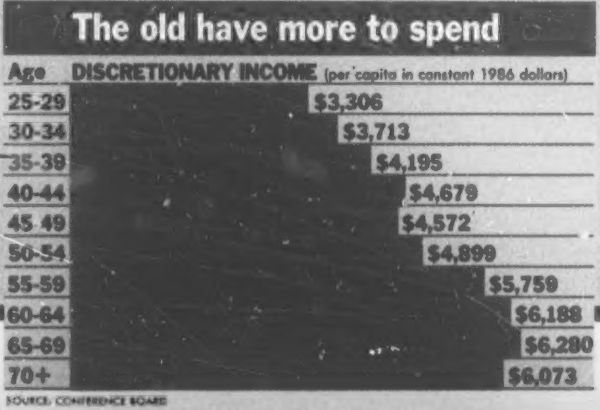
DOUG MENEZ

Dychtwald at home in San Francisco

It's hardly a secret: America is rapidly growing older. Yet the implications for politics, marketing, employment, and a dozen other facts of life are so vast that many people have not grasped them. In *Age Wave: The Challenges and Opportunities of an Aging America* (Jeremy P. Tarcher, $19.95) consultant Ken Dychtwald, 38, sets out to explain how this striking demographic circumstance will change our lives. Is the aging of America "the most important trend of our time," as the dust jacket proclaims? Maybe not. But it's awfully important.

Two major factors are creating the senior boom, as Dychtwald calls it. First, Americans are living longer. They are healthier and more active than any older generation before. As Dychtwald points out, average life expectancy in 1900 was 47; today it is 75, and within a decade it may reach 80. Second, births are plummeting. The fertility rate of today's women is half that of their mothers. So Americans over 65 will become a far larger part of the population, and the nation's median age will likely rise from 32 today to the mid-40s in 2050

Those over 50 are only a quarter of the U.S. population now, but they are the most powerful and affluent consumer group in history. They control about 63% of the net worth of all U.S. households and account for 40% of total consumer demand. Yet he claims that the over-50 crowd is a market that most—but not all—of American business ignores. He writes, "It's likely that decades from now historians will look back and wonder why American industry worked so hard to sell to the youth market when it was their parents and grandparents who had most of the resources."



SOURCE: CONFERENCE BOARD

Not that the over-50s are really old. One of Dychtwald's points is that as longevity increases, people will think of 60 as still a long way from old age. Yes, the body eventually begins to fail, and that creates hundreds of opportunities to cater to the elderly. In the world according to Dychtwald, levers will replace round doorknobs and faucets for arthritis-stiffened hands. Bathtubs and showers will have built-in seats. Cars will be equipped with larger side mirrors and dashboard display numerals. Public buildings with waxed floors will have to be carpeted so older people won't slip. Theaters will have low-level lighting in place of near total darkness.

Services will change too. Banks will offer more reverse mortgages so that home owners can continue to live in their houses while drawing on equity. Doctors will revive house calls. All kinds of transportation arrangements for the elderly will emerge, such as dial-a-ride jitneys with low-slung, wide-doored vans. Home deliveries will expand.

Companies are already responding. During holiday seasons some K mart stores offer special hours only for those over 55, so crowds stay small. Innovative drug and grocery stores are designing ways for older customers to avoid walking up and down the aisles. Instead they can call up a product on a television screen and automatically send the product to the checkout counter.

Dychtwald predicts the decline of what he calls the linear life, in which people get educated, work and have families, and then retire. Instead, they will live more flexible, cyclical lives, alternating work, education, and leisure. Employers will eagerly accommodate such flexibility because the number of jobs will probably grow far more than the number of workers in coming decades, and companies will need to court workers, including old ones. Retirement, says Dychtwald, will be retired.

The aging of America will even affect intimate relationships and the family, though just how is a bit tough to say. No one disputes that men become scarce as the years go by. Among Americans over 85, there are only 40 men for every 100 women. Dychtwald predicts that the man shortage will lead to all kinds of unusual alliances, including share-a-man relationships and even more same-sex relationships. It's happening now, he says.

– Fern Schumer Chapman

HOUSING POLICY NEEDS A REHAB

Washington spends poorly on the poor, and local governments block construction the middle class can afford. Here's a blueprint that can lead to homes for all. ■ *by Louis S. Richman*

Thanks to new state laws, homes in this New Jersey development start at $39,950 . . .

WHEN WERE YOU LAST at a dinner party where someone didn't raise at least one of these perennially favorite topics: (1) how that $47,500 subdivision split-level, bought in 1973, is now worth a cool quarter million; (2) how married children, all with good jobs, cannot scrape together a down payment for even the draftiest bungalow in the town where they grew up or work; (3) how if the government doesn't quickly resume building subsidized housing, the ranks of the homeless will swell beyond imagining?

Decent housing for all and widespread homeownership are major pieces of the American dream. But for many it looks like a dream perpetually deferred. The percentage of families who own their dwellings, which rose steadily for 40 years to a peak of 65.6% in 1980, slipped to 63.8% last year. That seemingly small decline means two million fewer homeowners. More than six million low-income households—nearly 50% of all people below the poverty line—spend over half of their incomes for rent. William C. Apgar Jr., director of the Joint Center for Housing Studies at Harvard, expresses a widely held view when he says, "America is being transformed into a nation of housing haves and have-nots." Most who worry about the trends assume that huge increases in federal spending are the answer.

A dispassionate look leads to other conclusions. First, there is a problem, not a crisis. Second, pouring more money into new subsidized housing won't help. What's required are federal and local policy changes that will allow the housing marketplace to work, along with carefully focused spending on the poor. The challenge presents Jack Kemp, the new Secretary of Housing and Urban Development, with a custom-built opportunity to test his free-market principles.

HOW MANY have-nots have we? Nobody can say for sure. Among aspiring first-time home buyers, young families in the 25 to 29 age group have been the hardest hit. The proportion who own homes has tumbled from 44% a decade ago to just over 36% today (see chart, page 86). Part of the reason—but only part—is that housing is now more expensive. The median-priced American home fetches $91,000—and in parts of the Northeast and California, the median is getting close to $200,000.

Costly residential real estate is to some degree a hangover of the late 1970s when the tornado of double-digit inflation lifted house prices clear into Oz. But the same winds also puffed up homeownership. Because mortgage rates were lagging behind inflation and house prices were rising 14.5% a year on average, smart young families saw a home as an unbeatable investment. Today, except in the tightest housing markets, prices are rising only about with inflation, and recent softening in some areas has raised fears of an actual decline in prices. Meantime, mortgage costs are higher, and lower income-tax rates have made interest deductions less important. Changing lifestyles have also reduced demand. Many people are postponing marriage—or abandoning the institution. Focus on the married couples who comprise the bulk of first-time buyers and you discover that ownership rates remain about where they were a decade ago.

Still, from anecdotal evidence alone, plenty of young people who want to buy simply can't. Some do not earn enough to carry mortgages, and their numbers have doubtless increased with recent interest rate hikes. A bigger obstacle, in the view of most experts, is that this generation of low savers cannot make the down payments.

The poor have a much worse problem in finding shelter, and their needs have outstripped federal assistance programs. Housing benefits, unlike Medicaid and food stamps, are distributed on a first-come, first-served basis to the limit of HUD's annual appropriation. This year its $12.4 billion housing assistance budget will reach just 28% of all who qualify. Some 7.7 million families fall through the cracks today, vs. six million in 1974. It's not for want of trying. Since the mid-Sixties the U.S. has spent about a quarter of a trillion dollars to

REPORTER ASSOCIATE *Charles A. Riley II*

. . . enticing hopefuls like Mike Pfeiffer, who recorded his visit to this three-bedroom townhouse costing $128,950.

build or subsidize the construction of over four million low-income housing units.

Government has not just failed to solve the housing problem: It has worsened it. Peter D. Salins, a professor of urban studies at New York's Hunter College, explains how. For all the money lavished upon it, government-built housing still accounts for a small proportion of the poor's shelter. Worse, it is outrageously expensive, inhospitable, and badly located. The money would go much further and yield more desirable housing, Salins argues, if it made the poor more like other consumers, able to pursue their desires in the marketplace. Zoning restrictions wreak further damage. Even as they clamor for more federal money to make housing affordable, local governments zone out the poor—and the not-so-poor.

Breaking the impasse has to start with meeting the needs of new home buyers. A healthy housing market relies on a concept that economists call "filtering." As new homes are built, more prosperous renters move up the housing ladder toward ownership. Their former apartments are freed up for less affluent tenants. Through a chain of such moves younger and poorer households are able to find acceptable apartments. But because so many young families aren't able to buy, the filtering process has broken down. Phillip L. Clay, an urban studies professor at MIT, estimates that middle-class renters now occupy some 20% of what was once lower-income housing in many tight urban markets.

Diddling with mortgage financing mechanisms to boost first-time buyers over the down payment hurdle offers only marginal help. The Federal Housing Administration's lending standards are already liberal, and loosening them further would merely risk more defaults. Allowing first-time home buyers to tap their tax-free IRA accounts might give some an extra push, but few young families have much in those accounts. A recent initiative in Michigan could turn into an open-ended drain on state funds. Governor James J. Blanchard wants to sell aspiring first-time buyers tax-exempt state bonds that would eventually cover their down payments. But if house prices rise faster than Michigan expects, the plan requires the state to make good the difference between the home buyers' savings and the amount they need.

Some buyers are making the nut by so-called equity sharing. In exchange for cash up front, a lender stakes a claim on the home's future appreciation—typically

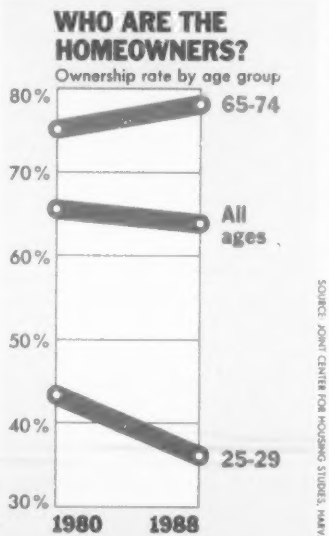
PHOTOGRAPHS BY ALAN DOROW

DOUG MENUEZ

The Beatties of San Francisco: A nonprofit group built their $634-a-month apartment.

50%. But such deals make sense only in markets where appreciation is all but guaranteed. Elsewhere lenders find the proposition too risky. Kenneth T. Rosen, chairman of the Center for Real Estate at Berkeley, California, would spread the risk by having the FHA or the Federal Home Loan Bank Board, which oversees the nation's savings and loan institutions, establish a national shared-equity fund. Should home prices tumble in one part of the country, the fund would be cushioned by the gains it reaps in regions where markets remain tight.

Rosen's idea deserves a serious look. Meanwhile, many young home buyers continue to get down-payment help from those friendly bankers of last resort, mom and pop. The National Association of Realtors calculates that about a third of first-time buyers depend on family assistance to supplement their savings. Mom and pop are often in great shape to oblige. Ownership rates among the old continue to climb, and home equity loans make it easy to borrow against that built-up wealth.



Declines among the young are pulling down the national rate. Oldsters are doing better.

The best solution to America's housing affordability problem would be to lower the cost of building homes. Filtering works best when the cost of developing new housing declines. So who is clogging the filter?

Don't blame developers. "The first-time buyer is a builder's bread-and-butter business," says John Phillips, a homebuilder in Olympia, Washington. "There is a steady flow of new customers as households are formed, and new families are likelier to buy when the economy is weak."

Homebuilders have made impressive cost-saving gains. Since 1980 the inflation-adjusted cost of construction has fallen 6%. Further improvements are within reach as the industry shifts from on-site "stick built" homes to factory-made modular units. Paul F. Kando, a highly regarded advocate for factory-built housing who directs the Center for the House in Washington, calculates that today's manufacturing methods can reduce the average cost of building a spacious 1,865-square-foot home 27% to $61,142. Such savings would reduce the annual income a buyer in Pennsylvania, for example, needs to qualify for a mortgage by $6,760.

If developers can build affordable housing and want to, what's stopping them? The chief villain is a web of local zoning and land-use regulations, which codify communities' determination not to have it. Originally intended to impose sensible order on growth, many ordinances now serve as barriers to all but the costliest new housing. Some are outright capricious. In Phoenix, for example, city fathers insist that most new homes be built with Spanish tile roofs instead of cheaper asphalt shingling. This harmonizing touch adds up to $6,000 to the price new home buyers must pay.

Strict limits on density do the most damage. As communities braced themselves against an onslaught of growth, they stuck fast to—or tightened—zoning regulations that determine how many houses can be built on how much land. Because raw land costs are the fastest-growing component of new home construction, the only way to reduce the cost of building suburban housing is to increase the number of homes that can be built on a site. But pity the developer who tries to wheedle a density bonus out of a local planning board. Haggling with officials can easily consume two or three years, while the developer keeps his money tied up in the gestating project.

THE AGONY DOESN'T end until the project's neighbors have been heard from, and they would rather live next to empty lots. "Angry neighbors have become the fourth branch of government," says Douglas R. Porter, director of development policy research at the Washington-based Urban Land Institute, a planning group. Hovnanian Enterprises, a New Jersey–based builder of over 2,300 starter homes each year throughout the Northeast (including those in the picture on page 84), estimates that zoning battles and lawsuits tie up construction starts an average of four years. Hovnanian employs 16 full-time lawyers to guide projects through the regulatory maze and to battle irate neighbors.

Easing standards can yield dramatic savings. Portland, Oregon, for example, speeded up its approval process, reduced its infrastructure requirements, and allowed

WHERE OWNING IS EASY—AND WHERE IT ISN'T

MOST AFFORDABLE	HOME PRICE 1988 average	HOUSEHOLD INCOME 1988 average	MONTHLY PAYMENT AS A PERCENT OF INCOME
St. Louis	$96,500	$46,900	18.2%
Cleveland area	94,900	43,800	20.4
Miami–Ft. Lauderdale	103,400	44,400	20.7
Tampa Bay area	94,500	37,200	21.6
Kansas City	108,200	43,400	22.2

LEAST AFFORDABLE			
New York City area	$193,000	$55,400	35.5%
San Diego	169,100	45,200	33.4
Los Angeles area	186,000	50,700	33.2
Boston area	195,700	55,500	31.9
San Francisco Bay	198,500	56,400	31.3

SOURCE: THE LIST OF 53 MOST IMPORTANT RESIDENTIAL MARKETS COMPILED BY LOMAS MORTGAGE USA

builder Mike Robinson to boost the density of his North Meadow Village development from four homes per acre to nearly ten. The variances helped Robinson chop an average $15,647 out of the price of each of 58 single-family homes and sell them for $50,000 to $55,000. HUD and the National Association of Homebuilders undertook an experimental program in 29 other cities during the mid-1980s, using the most advanced construction techniques and cutting regulatory barriers. It produced savings averaging 15%.

But a new obstacle to affordability known as the impact fee has reared its head. Since local property owners still want schools and sewers but are unwilling to tax themselves, local governments make developers pay. An outgrowth of the late-1970s property taxpayers' revolt, impact fees often choke off the building of starter homes. Communities in 31 states now levy them, and in many they have become monstrous, bankrolling items on local wish lists such as parks and swimming pools. In Los Angeles County, the charges have ballooned from $3,000 to $22,000 per new home over the past decade.

Why don't developers resist? Far easier for them to get quicker approval for fewer, more expensive homes, whose buyers can more readily be stuck with the costs. Says developer Phillips: "You have the same fixed overhead whether you build a $50,000 home or a $300,000 one, but it makes up a far smaller proportion of the selling price of the expensive home." Throughout the U.S., says George Sternlieb, an economist at Rutgers, impact fees, zoning restrictions, and regulatory delays add 20% to 25% to the selling price.

Breaking the regulatory logjam will require states to curb local boards. So far only a few have tried, though several more are discussing proposals. New Jersey has come up with the most promising approach. A series of state supreme court decisions known as the Mount Laurel cases, which culminated in 1986, established that access to housing is a constitutional right for the state's residents and banned exclusionary zoning. The townships can still plan their growth, but the plans must make room for housing that residents earning below $18,000, 80% of the state's median income, can afford.

A statewide body called the Council on Affordable Housing, made up of public officials, residents, and a developer, certifies new local standards and arbitrates disputes. Since the system was introduced, most of New Jersey's fastest-growing communities have gotten certification. Douglas V. Opalski, the council's executive director, thinks the procedures have helped cut approval times to under a year and will spur most of the 145,000 units of affordable housing the state needs by 1993.

Though such measures will do a lot to unclog the filter, they will not by themselves get the poor housed. What to do? Let's start with what not to do. Building more subsidized housing is the standard solution, but using scarce federal funds for that purpose helps too few needy families. The Office of Management and Budget estimates that each new unit costs $70,000. To build the 250,000 units HUD financed yearly in the late-1970s would cost $17.5 billion—nearly half again HUD's present outlays—and barely dent demand.

The harshest indictment of federal construction spending is that much of it perpetuates the inner-city cycle of decay and welfare dependency. "The projects were intended to shore up declining neighborhoods," says Robert L. Woodson, who heads a conservative poverty research group in Washington called the National Center for Neighborhood Enterprise. "Instead they have turned into social dumping grounds and have isolated residents in pockets of poverty far from the jobs that would help them escape."

If the Feds aren't to build new low-income housing, who will? A congressional commission last year estimated that 17 million families will need help by 2003, vs. about 13 million today. But, the group estimates, the number of subsidized and private-market apartments will fall from

Kathryn Eastep, 74, pays $240 a month for this single room in San Diego.

ALAN D. LEVENSON

about 12 million to just under nine million.

The commission has overstated the problem. Its projected 2% annual growth in the number of impoverished families is extrapolated from a base year of 1982, the trough of a recession. It also made no allowance for any increase in the supply of affordable, unsubsidized private rental housing—which provides three-quarters of the poor's shelter.

ANOTHER WORRY is that some of the poor's existing housing could be wrested from them in coming years. About half of all subsidized housing since the 1960s was built by private developers enticed by FHA-guaranteed, low-interest mortgages and rent subsidies. In exchange, the developers agreed that their projects would serve low-income occupants for 20 years. Those obligations are now beginning to expire. According to the commission, 523,000 subsidized apartments could fall out of the stock over the next 14 years as owners of some buildings convert to market-rate housing and others default. Here again, the estimates are too high. Conversion is risky—the market may head south before the rehab is done—and the foreclosed units won't just disappear, since HUD will auction them off to new buyers. HUD projects the loss will not exceed 150,000 units.

The Elekwachi family from Nigeria bought this $108,000 American dream built by a nonprofit group near San Francisco.

DOUG MENUEZ

Though vast, the remaining shortfall is beginning to yield to the efforts of hardy, private, nonprofit developers, supported largely by local businesses. Any federal program should aim to augment their efforts.

One such organization, Bridge Housing Corp., has put up 16 affordable-housing developments in the no-growth environment of greater San Francisco. Launched in a sublet office with a three-person staff in 1983, Bridge would rank as one of the nation's 100 largest homebuilders if it were a profit-making enterprise. Unlike older nonprofit housing development organizations born in an era of federal largess, Bridge structured itself as if it were a for-profit developer. Says President I. Donald Terner, formerly California's state housing director: "We knew we couldn't count on getting any federal money. We would have to wear suits and ties to the office, not Birkenstocks."

Bridge differs from for-profit developers in just two respects, not including Terner's nostalgia for sturdy sandals. First, it reserves 40% of its units for families with annual incomes no higher than $25,000—80% of the area median. The remainder go to families with incomes of $25,000 to $40,000, at market rates. Secondly, Bridge uses any profits from the market-rate units to reduce the cost or expand the number of units for lower-income residents.

To win over planning boards and neighbors, Bridge invests heavily in attractive architectural designs that blend with the surrounding community. In return it asks for relief from impact fees, along with zoning density bonuses that allow it to build up to 25% more units on a site. Having a for-profit partner helps: Bridge has worked with 11 Bay Area developers. "It stiffens the spines of local officials who have to stand up to angry neighbors," Terner says. "Bridge waves the flag of public purpose, and our partner offers a reassuring combination of financial depth and development experience."

Started with $5 million in grants from a local business group, Bridge has built or has under way more than 3,500 units with a construction value of nearly $250 million. Its success has spawned a half-dozen imitators around the country. And Terner expects that it will eventually inspire private developers to undertake affordable housing projects of their own.

In most cities, providing low-cost shelter relies on the scattershot efforts of energetic but largely inexperienced Birkenstock brigades. They are now getting help from a pair of nonprofit organizations with nationwide scope: the Enterprise Foundation, a Columbia, Maryland, group founded by developer James Rouse in 1981, and the Local Initiatives Support Corp. (LISC) of New York, begun with Ford Foundation money in 1980.

Both groups provide financial sophistication and management expertise along with funds. In Cleveland, for example, Enterprise has helped local groups put together an equity pool of $4 million from 25 local companies to rehabilitate homes. It leverages the private investment with public money, negotiates low-interest construction loans from local banks, and distributes the proceeds over eight projects.

With future occupants contributing sweat equity, each rehabbed unit can be sold for a modest $20,000 to families with annual incomes of $12,000 to $18,000. Enterprise has helped Cleveland's nonprofit groups lift production from 120 units a year to 300. They aim to remodel 1,000 homes a year by the early 1990s. (For more on what is happening in Cleveland, see Cities.)

ENTERPRISE uses its $20 million of assets to work with 86 local groups in 27 cities. LISC is raising over $50 million a year to finance development and rehabilitation in 25 cities. The groups' equity flows from a juicy federal tax credit that Congress passed in 1986. Investors can deduct from their federal tax bills up to 9% of the total cost of a low-income housing project each year for ten years after the project is occupied.

Corporations, however, have been slow to warm up to the program; they have claimed only $50 million in tax credits so far, though Congress authorized up to $300 mil-

MARC POKEMPNER

"Instead of gunshots, I hear birds singing," says Mary Ann Hughes. Housing vouchers, which let her move from a grim Chicago project to suburban Aurora, should be more plentiful.

lion per year. Investors are uncertain about the credit's future, and chary of being stigmatized as slumlords. Congress will soon reconsider whether to extend the credits beyond the end of this year. It should. As organizations like Enterprise and LISC continue to show that they can deliver attractive, cost-efficient housing, more corporate investors will be likely to ante up.

EVEN HOUSING the homeless and the working poor needn't require subsidies. Booming San Diego had lost more than 2,000 single-room-occupancy hotel units to new development since the mid-1970s. An investment group called BMW Partnership planned to raze the SRO on a parcel of land it owned. But when the site proved too small to convert, BMW decided to see if it could operate the hotel instead.

The developer ingeniously packaged its project to maximize amenities on the cheap. It wanted to provide each room with its own bathroom, for example, but subdividing the space to build partitions around the toilet, as the building code required, would have run up costs. So the partners asked the city to designate the entire room as a bathroom. Says managing partner Christopher J. Mortenson: "It offended the city council's notions of decency, but nowhere in the building code did it say that people couldn't sleep in 'bathrooms.' "

The owners did not scrimp on comforts for residents, however. Each fully furnished 120-square-foot room comes equipped with an all-tile shower, microwave, and TV. Total finished cost: $20,000 per unit—low enough for BMW to charge rents of $220 to $275 per month and turn a profit.

Residents are drawn from a cross-section of the elderly, working poor, formerly homeless—and the occasional European tourist happy to find a clean, cheap room reminiscent of youth hostels at home. To the 207 SRO units they now manage, Mortenson and his partners will add 418 by year's end. The partners have 400 more units planned, and with other developers starting to show interest, the city expects it will replace all its lost SRO space over the next three years.

So far, this thousand-points-of-light approach is adding just 25,000 units a year to low-income stock. How can Washington add battery power? The best approach would be to increase demand, or rather what economists call "effective demand"—the ability of more poor renters to afford market rents.

That was the course HUD followed during the Reagan years as it switched from new construction to a system of voucher certificates. At an average yearly cost of $3,500 per household helped, vouchers pay the difference between 30% of their income and the prevailing "fair market rent," which nationally averages $467 a month. HUD increased the number of recipients by nearly 45,000 a year over the past four years.

Stuart M. Butler, director of domestic policy studies at the Heritage Foundation and an adviser to Jack Kemp, proposes that the government vastly expand the program. He points out that the federal and state governments already distribute emergency housing assistance equal to HUD's $12.4 billion benefits budget, but it is scattered over several agencies. If all the funds were pooled under HUD, he estimates, vouchers could serve some 55% of all qualifying households—about the same proportion that entitlement programs reach—and cut administrative costs. As voucher use spreads and boosts the purchasing power of the poor, Butler expects the added demand will stimulate more private-market housing production.

OPPONENTS of vouchers claim that they merely strain the already short supply of cheap rental housing. But even leaving aside regional gluts, vacancy rates for low-income rental housing are high. More to the point, vouchers bring higher-rent housing within reach of the poor. Though recipients have their hardest time in cities like Boston and New York where rent control laws keep apartment turnover low, nearly all find apartments within 60 days.

The benefits of vouchers spread far beyond their principal aim. Instead of warehousing the poor in blighted ghettos, they allow recipients to decide where *they* want to live. In Chicago, James Rosenbaum, a sociologist at Northwestern University's Center for Urban Affairs, is tracking 114 black inner-city welfare mothers and their children who used vouchers to relocate in mostly white suburbs. "They blend beautifully into their new communities," he says. "This is the most promising approach I've seen yet to promote fair housing." It also puts the poor where the jobs are. Giving low-income Americans mobility and choice—something the old programs never did—offers the hope not only of housing them better but also of finally achieving the overdue national goal of a racially and economically integrated society.

THE NEW GAME IN LIFE INSURANCE

Upstarts in the protection racket have forced old-line players to offer policies that are as much investment as insurance. That makes for happy customers and sad profits. ■ *by Terence Paré*

A GUY WITH A GIMMICK

Robert MacDonald, president of LifeUSA, has riled the industry by giving independent agents stock in his company.

A PRODUCT REVOLUTION has rocked the life insurance industry, with effects that reach from the companies' palatial home offices to the customers' kitchen tables where agents used to sell whole life policies over coffee and doughnuts. Giants have been staggered, upstarts catapulted into positions of great power. Only now, as the dust begins to settle, are the outlines of the industry's future becoming clear. And one huge question remains: Can anybody make much money in this business, once a famously sure thing? The industry isn't smug any longer, says Robert E. Carlson, executive vice president of Northwestern Mutual Life in Milwaukee: "Frankly, we're scared."

Companies that thrived for decades offering loved ones protection against "family variations" have been forced by new competitive pressures to provide policyholders with products that offer, along with the traditional death benefit, an attractive return as an investment. At stake is the more than $85 billion that Americans poured into life insurance last year. To the victors will go the customers, but to the customers go the spoils: cheaper, better products and a competitive rate of return on their money.

"Premiums mean profits" was the old life industry watchword, and from 1968 to 1978 total premium receipts more than doubled. But by the early 1980s rocketing interest rates had exposed the flaw in whole life insurance, which accounted for more than 70% of the industry's new premiums and most of its profits. The customer's rate of return on the cash value of a policy—the premiums paid plus the interest accruing on them, less the cost of the death benefit—was a mere 4.5%, in part because insurers typically invested the money in corporate bonds. True, that 4.5% was tax-deferred. But you had to hold the policy for 30 years to get it. Money market funds were already yielding savers in excess of 10%, and that rate seemed to be climbing every week. Term insurance, which is cheaper than whole life because it offers straight protection with no cash value, and universal life, which provides a return on cash value competitive with money funds, began nibbling at whole life's market share, ultimately eating into the profits of the old-line life companies.

The concept of universal life insurance, whereby the insurer puts the cash value of a policy into investments that yield a varying return to the customer, had been in the actuarial textbooks since the 19th century, says James C.H. Anderson, director of Towers Perrin, a New York actuarial and management consulting firm. But Ander-

HOLDING THE STEADY COURSE

Donald Schuenke made Northwestern Mutual's traditional whole life policies more competitive with the hot new products.

ANDY FREEBERG

WINNING THROUGH DIVERSIFICATION

New York Life's George Bundschuh runs a self-styled "leader in financial services" rather than an insurance company.

son's paper on universal life, presented at a conference on insurance in 1975, was universal life's modern introduction. The first policy was sold three years later by a small insurer owned by the E.F. Hutton brokerage firm. It was an ideal vehicle for newcomers like Hutton and First Penn-Pacific, which didn't have much life insurance in force and weren't weighted down by big bond portfolios that were underwater.

OLD-LINE COMPANIES, which did have such portfolios, were already having a hard time competing in a high interest rate environment. In 1980, loans on policies were still available at 6% to 8%. Savvy customers borrowed against the cash value of their insurance to play the interest rate spread between their cost of borrowing and what they could earn in a money market fund, thus siphoning off the insurers' investment income. Insurers couldn't sell off their lower-yielding portfolios of corporate bonds and reinvest the proceeds in higher-yielding short-term securities without taking huge losses.

By the time the established companies began selling universal life in 1982, they found themselves cannibalizing their own business. Policyholders just turned in their whole life and reinvested the built-up cash in higher-yielding universal. Compounding the problem, upstart companies frequently guaranteed high minimum rates of return on the investment portion of universal life in order to woo business away from the established carriers. Old-line companies fought back with their own high returns. When rates turned down in the middle of the decade, many companies were locked into a money-losing situation. Says Robert W. MacDonald, chief executive of LifeUSA, one of those smaller upstarts: "They thought double-digit inflation would never end."

Lost in the competitors' rush to grab market share was the distinction between insurance, a business of guarantees, and investment, a gamble. Once an insurance policy becomes an investment, the proper party to decide on risk is the purchaser. Variable life insurance, first offered widely in 1981, let him do so. As with traditional whole life and universal, part of the premium goes to buy protection, but in a variable policy, the death benefit and cash value depend entirely on the rate of return earned by a mutual fund selected by the policyholder for the savings portion.

Despite such occasional missteps as single-premium life insurance—the Treasury Department has decided to tax most single-premium policies as investments that only masquerade as insurance—life companies are in the investment products business to stay. "If I had my druthers," says Robert W. Barth, executive vice president of Equitable, "I'd prefer to have the traditional whole life products. But you have to have the new products the marketplace demands."

The trouble is that it is more difficult to make money selling this kind of insurance. The more the consumer gets out of life insurance, the less there is for the insurer. And consumers, many of them baby-boomers increasingly concerned about providing nest eggs for their children, are getting more and more. Insurers are getting less, much less. Says Harry G. Hohn, vice chairman of New York Life: "There's no secret about the fact that one of our industry challenges is lower margins on the products." Lower margins usually mean lower profits. Just how much lower is difficult to say because life insurance accounting remains dishearteningly complex (see box). But a look at life insurers' reserves over the past decade suggests what has happened to the overall profitability of the industry.

Just as banks invest depositors' money, life insurers invest the premiums they receive from policyholders. Those funds are recorded on the balance sheet as "reserves." The difference between what companies earn on the investment and what they credit to the policyholder is a basic source of profit. In 1978, insurers were earning at least 8% on about $177 billion of reserves for life insurance. Assuming they were crediting about 4.5% to the cash value of the policies, there was some $5.8 billion left for them. In 1988, life insurance reserves totaled an estimated $289 billion, but insurers say they made only a slim 1% profit, or a measly $2.9 billion, even though the amount of ordinary life insurance in force more than tripled to $4.6 trillion.

Putting an additional squeeze on profits

TERM'S APOSTLE

Art Williams, founder of A.L. Williams Corp., and his part-time sales force chant: "Buy term and invest the difference."

REPORTER ASSOCIATE *Reed Abelson*

PHOTOGRAPHS BY JAMES SCHNEPF

is the fact that life insurance agents, many of whom are now licensed to sell securities, are quick to pitch the policies not as protection in case of untimely demise, but as investments. Says Ronald L. Junkin, an independent agent in California: "We don't back up the hearse anymore." The upshot is that the market has become short-term oriented: Investors are always hunting for the best return. Voluntary policy terminations are hovering at 10% of all policies in force in 1988, compared with 6.6% in 1977, and at over 20% for policies in force less than two years. That's particularly disturbing to the companies that provide the insurance, since agents take their cut from the first year's premiums. The bulk of the company's profits are further down the road.

The resultant profit pinch has meant that in an industry once renowned for stable employment, executives are now talking about productivity and downsizing. Over the past two years, five insurers have put life insurance operations on the block. Other carriers are hiring fewer and fewer people. Still others talk about streamlining, which often translates into laying people off. Last June, for the first time in its 125-year history, Travelers, the Hartford-based multiline insurer, offered 420 people voluntary retirement packages and laid off 465 more. In 1988, Connecticut Mutual cut its local work force by 20%.

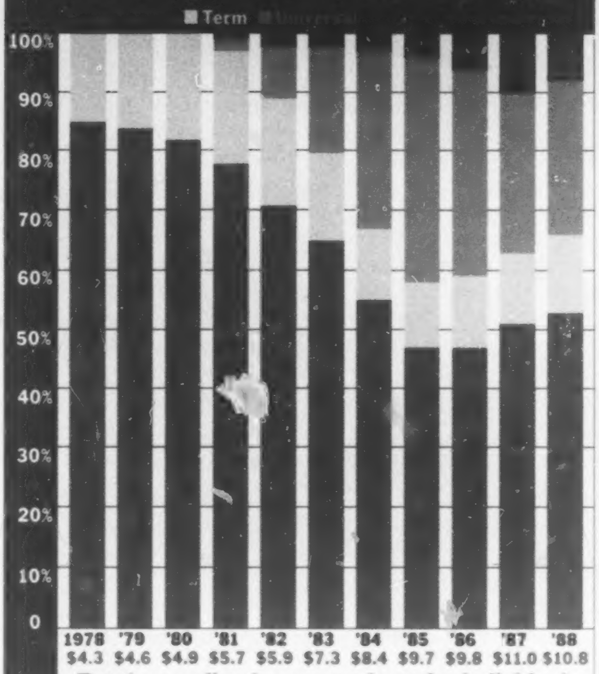
A PRODUCT PRIMER FOR LIFE INSURANCE

	PREMIUMS	CASH VALUE	DEATH BENEFIT	PREMIUMS (per $1,000 of coverage*)	
Term	■ Buy protection in the form of a death benefit ■ Payments increase when the policy is renewed	■ None	■ Amount is fixed	1978	$5.20
				1983	$2.90
				1988	$2.69†
Whole life**	■ Buy protection in the form of a death benefit ■ Build a cash value ■ Payments are fixed	■ May be borrowed against by the policyholder ■ Yields a fixed return guaranteed to be more than 4%	■ Amount is fixed	1978	$18.20
				1983	$15.90
				1988	$14.55†
Universal life	■ Buy protection in the form of a death benefit ■ Build a cash value ■ Payments may vary at the discretion of the policyholder	■ May be borrowed against by the policyholder ■ Is invested by the insurer to yield a return that varies but is guaranteed to be more than 4%	■ Amount may vary at the discretion of the policyholder	1978	N.A.
				1983	$11.30
				1988	$10.08†
Variable life	■ Buy protection in the form of a death benefit ■ Build a cash value ■ Payments are fixed	■ May be borrowed against by the policyholder ■ Is invested by the policyholder in a choice of mutual funds ■ No guaranteed minimum rate of return ■ Amount varies with the performance of the mutual fund	■ Guaranteed minimum amount ■ Amount varies with the performance of the mutual fund	1978	N.A.
				1983	$15.70
				1988	$13.26†
Variable universal	■ Buy protection in the form of a death benefit ■ Build a cash value ■ Payments may vary at the discretion of the policyholder	■ May be borrowed against by the policyholder ■ Is invested by the policyholder in a choice of mutual funds ■ No guaranteed minimum rate of return ■ Amount varies with the performance of the mutual fund	■ Guaranteed minimum amount ■ Amount varies with the performance of the mutual fund ■ Amount may also vary at the discretion of the policyholder	1978	N.A.
				1983	N.A.
				1988	$11.70†

*Figures are the average of first-year premiums for all policyholders. Premiums in later years will vary, depending on the product. **Newer policies may permit the policyholder to adjust the premiums, cash value, or death benefit. †Figures for 1988 are FORTUNE estimates.

SOURCE: LIFE INSURANCE MARKETING AND RESEARCH ASSOCIATION

MARKET SHARE IS CHANGING



Total annualized new premiums for individual life policies (in billions)

SOURCE: LIFE INSURANCE MARKETING AND RESEARCH ASSOCIATION ESTIMATES

Companies that remain in the life insurance business have responded to the crunch with three basic strategies. Some have transformed themselves into diversified financial outfits, offering a myriad of products and services. Others have concentrated on their niches, improving their existing products and containing expenses. Still others are changing not the products they sell, but the distribution systems used to sell them.

New York Life, one of the oldest and largest of the mutual companies—mutual companies are owned by their policyholders, whereas stock companies are owned by investors—now describes itself as a "leader in financial services" rather than as a life insurer. The mix of the company's 1988 business bears the description out. Ten years ago New York Life derived 52.6% of new premiums from sales of traditional whole life and term life policies. In 1988 that figure was a mere 16%. Most of New York Life's premiums came from investment-type products, annuities, and pensions. Group life and health insurance, which accounted for 20.8% of revenues in 1978, represented only 6.9% in 1988, little more than the 6.1% that the company collected from sales of mutual funds run by MacKay-Shields Financial, a money management firm it acquired in 1984.

New York Life is one of many carriers that have acquired a firm specializing in money management. Once the unquestioned champs at managing retirement fund assets, insurers lost that business to feisty independent money managers in the 1960s. They now are winning those accounts back, not by beating the independent hotshots, but by joining them. Prudential bought Jennison Associates Capital in 1985. Equitable acquired Alliance Capital Management in 1985 and Metropolitan Life bought State Street Research & Management in 1983.

These combinations have not always proceeded smoothly. Conflicts between genial insurance types and the intense "Lunch is for wimps" Wall Streeters may be unavoidable. Back in 1971, when Kemper Group was just a simple collection of insurance companies and not the diversified financial services operation it is now, James S. Kemper Jr., president and son of the company's legendary founder, moved the firm's headquarters from Chicago to Long Grove, Illinois, 39 miles away. There he had lakes around the buildings stocked with bass and bluegills so employees could fish during the lunch hour. Nowadays H. Ronald Schaad, who runs Kemper Investors Life Insurance, a subsidiary based in the Windy City—corporate headquarters remain in Long Grove—laughs at the thought of it: "I don't know whether they're fishing out there, but we sure as hell have no time for it here."

THOUGH Northwestern Mutual acquired its own brokerage, Robert W. Baird & Co., in 1982, Chief Executive Donald J. Schuenke views the acquisition as a simple investment. When other firms went riding off in all directions to find new products, Schuenke held the steady course, lowering the premiums on the company's existing traditional whole life policies, making them more competitive with the hot new stuff bursting onto the scene. The result? Schuenke is piloting what has for seven years been the most admired life insurer on FORTUNE's survey of corporate reputations. Says he: "We're not really doing anything different, we're just doing it more efficiently than anyone else." A calm port in a storm of change, Northwestern still offers its employees, the most productive in the business, a free lunch each working day.

Other companies sought to shore up profits by overhauling the system of agents through which life insurance is typically sold, a system long considered the most expensive and immovable obstacle to fundamental change in the industry. Agents are costly to train—about $150,000 per—and costly to keep. Typically, 50% of the first year's premium of a whole life policy goes to pay the agent's commission. Companies tried to change the agency system when the product revolution was at its most torrid. Established concerns, piqued when their agents defected to smaller carriers that offered the more competitively priced universal life products, flirted with the idea of changing the agency system, says George A.W. Bundschuh, vice chairman of New York Life. "But," he adds, "it was a strategic error, because you really do need a distribution force." Life insurance is still a product that is sold, not bought, and companies can't afford to alienate their agents.

The industry has tried sales techniques that completely bypass the agent, as anyone who has received junk mail knows. These so-called alternative distribution schemes have begun to have some success, although the amount of coverage sold—$44.5 billion—remains a tiny fraction of the ordinary life insurance in force. Annual sales of mass-marketed life insurance such as National Benefit Life and Colonial Penn Life just about doubled from 1985, to $9.1 billion in 1987. Only three states allow savings banks to sell life insurance: Connecticut, Massachusetts, and New York. But in 1987, the latest year for which figures are available, sales of SBLI in those states reached $4.9 billion, more than twice the previous year's.

A few carriers are trying to change not the system, but the agent. Over the past 12 years Art Williams, the founder of the upstart Georgia company A.L. Williams Corp., has assembled an army, 195,000 strong, of homemakers, firemen, policemen, and teachers, who sell term life insurance—and only term—in their spare time. They talk to their friends and neighbors over the kitchen table, much the way a life insurance agent always used to. Once a week, over the company's private television network, Williams exhorts his minions with the fervor of a Scottish Covenanter: "Buy term and invest the difference." The message sells. Last year A.L. Williams collected premiums of $342 million, vs. $354 million for ordinary term sold by Prudential Life Insurance Co., the nation's largest life insurance company.

Most of the rest of the industry disdains Williams, regarding him as a huckster. His fervid hordes persuade people to convert their whole life into the vastly cheaper term and to reinvest the excess accumulated cash value in mutual funds, or more likely, say some aggrieved traditionalists, in a trip to Hawaii. Frank Nathan, an agent for New York Life for nearly 60 years, minces no words when discussing Williams: "He's doing a tremendous disservice to most policyholders. He's a menace." The coach's answer to his critics? "They may think we're a bunch of greenies riding into town on the back of a turnip truck. But the truth is we're beating their behinds."

Robert W. MacDonald, founder and president of LifeUSA, based in Minneapolis, has stuck with the traditional professional agency system and has also taken new steps to charge the agents up. In 1987, with backing from Transamerica, MacDonald launched the new company, offering all the latest products, but with a twist that irks the industry. Independent agents receive stock in LifeUSA for every policy they sell. Most life insurance is sold by captive agents who work for a particular company, while independent agents usually sell the insurance of more than one company. They are supposed to be evenhanded about the products they sell their customers. "How can an agent be objective if he has stock in one of the companies?" says a critic. MacDonald scoffs at such punctilio: "That's coming from a company that has a contract that says if the agents don't write exclusively for them, they'll be terminated."

BIG CHANGES IN BEAN COUNTING

■ Accounting is supposed to reflect the financial condition of a company, but with life insurers it more often resembles a trip through Alice's looking glass. So arcane is insurance accounting that it is nearly impossible to compare the financial performance of one company with that of another, let alone the profitability of the industry with that of any other business. Now, it seems, the Financial Accounting Standards Board, the rule-making body for corporate accounting, has had enough of Wonderland. In the offing are changes to make things clearer that may result in lower reported revenues and earnings for some life insurers.

The big change will be in the accounting for the carriers' universal life products, which include variable life and universal variable life. Traditionally insurers treated all premium receipts as revenue. That convention did not mislead anyone as long as the product was old-fashioned whole life insurance, where the premium was fixed for the life of the policy. But the terms of universal life contracts are flexible, permitting policyholders easier access to the cash value and the freedom to change payment schedules and death benefits. The new procedures ordered by FASB make insurers credit the premiums generated by universal life products to a policyholder's account, leaving only the portion that covers administrative expenses and the death benefit to be considered as revenue. Beginning with their 1989 financial statements, insurers that sell mainly these policies will likely be reporting much lower premium revenue.

Income figures could be hit as well. Under the old rules an insurance company actuary determined the liability an insurer booked for a policyholder's benefits—that is, when the company was likely to have to pay out and how much. In doing so, the actuary was permitted to factor into his calculations the hefty surrender charges a company would collect if a policyholder decided to cash in his policy. The new procedures permit the carriers to recognize surrender charges only when they are realized.

Companies are balking at the changes, which some see as meaningless numbers-shuffling. All the more so since the changes affect only certain companies and won't relieve them of other accounting burdens. Insurance is regulated at the state rather than the federal level, and the new FASB rules will not touch the statutory accounting principles that the carriers follow when filing financial reports with the insurance commissions of the various states in which they operate. Mutual companies, which include most of the goliaths that have been in business a century or more, will also be exempt from the changes: They are not public companies and hence don't come under FASB's jurisdiction. The new regulations will hit the annual reports and 10-Ks only of investor-owned carriers. But they account for 60% of the life insurance in force. That's a big enough group to kick up quite a fuss. FASB received over 120 letters of comment criticizing the changes.

AFTER A DECADE of change that has largely favored the upstarts, the initiative may be shifting once again to the venerable behemoths that have long towered over the industry. The 33 life insurers that have been in business for 100 years or more still account for more than half the $1 trillion in total assets of all U.S. life insurers and for about 40% of all the life insurance in force. With the product revolution that so rattled older carriers winding down, service is likely to be the primary factor in determining future market share. That returns the advantage to the huge companies like Equitable and New York Life that have the capital to invest, for example, in sophisticated computer systems. "It took us two years to prepare to introduce a new product in 1978," says George Trapp, vice president at New York Life. "We can do that in a couple of weeks now." Upstarts will likely have to join forces to survive in the thin air of this new capital-intensive atmosphere.

A formidable challenge for all insurers awaits in the shape of commercial banks, increasingly loud in their demands that they should be allowed to sell insurance. Other new competitors have already jumped in: Fidelity Investments, the giant mutual fund company, recently started selling its own life insurance.

As the ozone layer of regulation continues to disintegrate, the competitive environment will only get hotter. Life insurance companies, which grew and prospered by creating a product to protect Americans against unexpected change, have yet to devise a product that will protect themselves in the new world they are entering. ■

YUPPIE SPENDING GETS SERIOUS

Those conspicuous consumers are settling down, eating in, and stashing their cash in quality furniture and Detroit wheels. They're even giving some of it to charity.

■ *by Faye Rice*

Volunteer Andrew Lipman raises money for New York City's Big Brothers Inc.

JOYCE RAVID

BRACE yourselves marketers: The yuppies, those ambitious, self-obsessed, young baby-boomers who flaunted their affluence and fascinated Madison Avenue, are toning down the flash. After leading their generation along the path of conspicuous consumption and debt overload, the big spenders are trading their exotic vacations and expensive restaurants for charity work, takeout food, and cozy nights at home. Says Faith Popcorn, chairman of the marketing consulting firm BrainReserve: "They are reaching for reality."

The reality is that these acquisitive creatures are aging and moving into a period of their lives when they are setting up house and having children. They remain the spendthrifts they always were, but the money isn't going into BMWs, cocaine, and champagne. Now they get their kick from furniture, home computers, and gourmet carry-out meals. Says Leo J. Shapiro, whose Chicago market research firm spots new trends: "Money is still the root of all yuppie happiness. They are just shopping more prudently."

Yuppies, the acronym for young urban professionals, are the top-earning 3.5 million baby-boomers whose personal incomes average $51,000 a year. They are well-educated college graduates, often with a year or so of postgraduate study. The term originally described affluent city dwellers, but marketers quickly broadened it to include prosperous suburbanites.

CREAM OF THE BOOM	POPULATION in millions	INCOME Annual average
All baby-boomers	76.0	$16,753
Yuppies	3.5	$51,000
Would-be yuppies	12.7	$18,000
Elite blue-collar workers	2.5	$45,000

SOURCE: J. WALTER THOMPSON USA

Traditional yuppies with the money to satisfy every consumer whim are still around. Take Larry Kent Woods II, 31, who lives in Birmingham, Alabama, and has zoomed up the ladder at Tele-Communications Inc., where he is now a divisional marketing director. A bachelor, Woods loves gourmet food, drives a Porsche 944, dabbles in the stock market, and recently bought a second home that he is furnishing with original art and "quality" antiques. Says he: "Money is the only scorecard that people keep track of."

But the trend is moving away from that scorecard. In a recent study conducted for Chivas Regal, two-thirds of yuppies claimed to prefer a less materialistic life. They also said they increased their donations to charity in 1988. Says investment banker Andrew Lipman, 29, who does volunteer fund raising for Big Brothers: "I've seen too many people on Wall Street who think that money and possessions are the only thing." Adds Suzette Brooks, 29, a lawyer who founded New York Cares, a volunteer group of young professionals: "Times are changing, and many of them want another dimension to their lives beyond going out every night and partying."

Focused on work and wealth, many upscale boomers delayed marriage and children, but the bulk have now crossed the 30 threshold. Yuppies today are more likely to be married, homeowners, and suburbanites than they were in 1985, according to a recent demographic study by Peter Kim, a senior vice president at the J. Walter Thompson USA advertising agency.

continued

Three economic bumps in the night also encouraged profligate youngsters to wise up. The first was the tax reform act of 1986, which chipped away at write-offs for tax shelters and credit-card interest. Then the dollar dropped against other currencies, and the prices of foreign goods jumped. The final assault on the boomers' pocketbooks came with the stock market crash of 1987. While most Americans took it in stride, Wall Street yuppies earning six figures a year were jolted to their essence. Says a 32-year-old commercial banker who is married to an investment banker and describes herself as frugal: "Before the crash we were shopping for a house in the $800,000 range. But entire departments at Wall Street firms were being wiped out, so we stopped shopping and began to save."

KATHERINE LAMBERT

Liz Morina (left) and Bob Murphy give chintz no chance in a Virginia Bloomingdale's.

In sheer numbers yuppies represent only 4.6% of the 76 million Americans born between 1946 and 1964, so marketers must also pursue yuppie copycats, those less affluent boomers who blew their wads on extravagant consumption and are now joining the switch to more sensible spending. Peter Kim has tagged the major copycats "elite workers" and "would-be yuppies." The originals and the two groups of imitators make up 24.6% of baby-boomers (traditional blue-collar and clerical workers and homemakers account for the rest), but by 1995, they will control close to 70% of boomer income.

Elite workers, or "electric blue collars," as they are sometimes called, are not college graduates, but they earn average incomes of $45,000, only slightly less than yuppies do, serving the high-tech industries. These data processors, medical technicians, and telecommunications repairmen don't fret about job security; they're in fields where qualified people are in short supply. Thus, they are dream consumers. They are just as likely as yuppies to spend freely on diamond rings, expensive stereos, and fancy cars, but they are even more willing to buy campers, snowmobiles, and wood-burning stoves.

These acquisitive blue collars are also just a tad behind the trend. They are still smitten with powerboats, cowboy boots, and designer jeans, and, unlike the yuppies, the fitness fetish seems to have passed them by. They drink bourbon and beer, smoke cigarettes, and chow down such high-cholesterol no-nos as bacon and eggs.

The would-be's are much closer to the affluent yuppies in spirit, but their bankrolls are weak. Though they are well educated, they work in low-paying professions like teaching and social work and so earn an average of only $18,000 a year. Keeping up with the yuppies has thrust the would-be's into more credit-card debt per capita than all the other boomers.

The crash had an enduring psychological effect on these people, and they are worrying about their highly leveraged lifestyles in an uncertain economy. At the same time the sagging dollar is forcing them to reevaluate their beloved foreign cars and clothes. Like yuppies, they continue to prefer Perrier to booze and travel abroad less often. Would-be's, like all boomers, are turning into sofa spuds and are losing interest in going out to the ballet, theater, and rock concerts.

SINCE THE YUPPIES set the trends, what they are buying now will soon be taken up by the copycats. Today's prestige purchase is a house, and when it comes to his castle, this prince wants a palace. The homes that are moving fastest are in the 4,000- to 5,000-square-foot range, which usually translates into six or seven bedrooms and a median pricetag of $500,000. Says economist Michael Sumichrast, publisher of *Real Estate Perspectives*: "They are simply not satisfied with a house. They want a statement." Though the copycats will never be able to afford half-million-dollar statements, they are doing the best they can in less expensive neighborhoods.

Furniture is the next spending priority. During the past three years sales have risen 23% to $161 billion—with most of the trade being in antiques and reproductions. "Affluent yuppies are very much influenced by instant tradition. That's why they like Ralph Lauren and Laura Ashley," explains Carl Levine, senior vice president of Bloomingdale's. Copies of 17th- and 18th-century English and French furniture and 19th-century American reproductions have been flying out of his stores. Says Levine: "They say they are looking for their roots, but their ancestors probably lived much more simply."

So did their parents. All three boomer groups are springing for oversize bathrooms with whirlpool tubs, and lavish entertainment centers—that's the room Dad called the den—packed with CD players, tape decks, VCRs, stereo TVs, and electronic diaries. Kitchens bristle with automatic breadmakers, pasta machines, food processors, and contraptions that dispense cappuccino. Boomers who never baked a potato are buying industrial ranges with microwaves and restaurant-size freezers. Says Frederick Elkind, director of Ogilvy & Mather's Consumer TrendSights division: "Home has become the mother ship. It has all these exciting things to entertain and sustain them."

Of course, some young families cannot afford a home at all (see Politics & Policy). For others, the expense of buying and fur-

---

REPORTER ASSOCIATE *Edward C. Baig*

WHAT'S HOT . . .	WHAT'S NOT
Minivans and Ford cars	**BMWs**
Furniture	**High-priced women's fashions**
Gourmet takeout food	**Expensive French restaurants**
Personal computers	**Sailboats**
Original contemporary oil paintings	**Rock concert tickets**
Diamond engagement rings	**Running shoes**
California Chardonnay	**Champagne**
Breyers ice cream	**Häagen-Dazs ice cream**
Compact discs	**LP records**

SOURCES: OGILVY & MATHER CONSUMER TRENDSIGHTS, J. WALTER THOMPSON USA, PRUDENTIAL-BACHE ECONOMICS GROUP, LEO J. SHAPIRO & ASSOCIATES

nishing a house leaves little in the kitty for anything else. Economist Edward L. Yardeni of Prudential-Bache Securities says the restaurant business has been flattening after two years of rapid increases. High-priced eateries in major U.S. cities are suffering most. In New York City, for example, yuppie haunts like Cafe Seiyoi an and Joanna have closed. The spenders have not forsaken status food altogether, they're just eating it at home. Business is so brisk at gourmet grocery stores that their numbers have tripled. In 1980 there were about 4,000 specialty food shops nationwide: by 1988 there were about 12,000. Says Phyllis C. Richman, food critic for the Washington *Post*: "Fancy carryout stores have become the adjunct kitchens for the young professionals with ambitious tastes."

At FBC Foods International, a gourmet shop in Denver, sales increased in each of the past two years even though the local economy has ptomaine. "We have fewer people shopping with us, but the ones that remain have elevated tastes," says owner Jane Dorsey. "I don't see yuppies cutting back at all." Hot sellers include beluga caviar at $58 an ounce, raspberries that recently sold for $6.79 a pint, and all types of takeout dinners, such as stuffed prawns at $12.95 a pound. Says Dorsey: "Even the kids of yuppies have developed sophisticated taste buds. They never pass up a chance to sample the pâté."

Meanwhile some food favorites are being forsaken according to Peter Kim. Yuppies are scooping up 60% less Häagen-Dazs than they were in 1985. Now they're into Breyers ice cream, which is cheaper ($1.69 a pint vs. $2.19) and lower in calories (160 per 4-ounce serving vs. Häagen-Dazs's 270). The oenophiles are swilling California Chardonnays, and sales of imported wine and champagne have declined 23% over the past three years.

Hit hard by changing boomer spending patterns—not to mention the wilting dollar—is the European car market. Total sales downshifted 27% during the past two years, including a 48% plunge at Porsche, 24% at BMW, and 15% at Mercedes. There is a new elasticity in yuppie demand: The good life is still possible even if "the ultimate driving machine" in the garage is a Ford. Affluent boomers are buying the sleek Taurus sedan, the sporty Lincoln Mark VII, and the macho Bronco II truck. Copycats are driving American also. Most were never able to afford European cars, so they bought Japanese autos, but those prices shot up too.

EUROPEAN CAR manufacturers are fighting back. "We're in a war," says Robert J. Sinclair, president of Saab-Scania of America. He has raised Saab's ad budget 30% and is stressing the car's family-oriented features, like roominess and its top safety ranking from the Highway Loss Data Institute, a nonprofit auto research firm.

Some forecasters believe that the yuppies will soon return to their extravagantly improvident ways. Says Fred Elkind of Ogilvy & Mather: "There has only been a tempering of the extreme flaunting of affluence. That same euphoria could easily repeat itself if the dollar rebounds." But even he thinks that some of the shift may be permanent.

The big spenders are having babies, and there tends to be a dramatic dropoff in trivial purchases after the arrival of children. Chicago consultant Shapiro figures that the more yuppies make, the more they spend on their children. If the household income is $40,000, parents shell out an extra $1,000 a month beyond their normal expenses for the upkeep of a child. The $50,000 household spends an additional $1,360 per month on a kid, and for parents earning $100,000 the tab is $3,000.

A young Philadelphia lawyer has discovered that his $70,000 salary is just enough to cover the mortgage on his "humble twin," the due bill on his old student loans, and shoes for his children, ages 5 and 2. He shares a 12-year-old BMW with his wife, who has not worked since the children were born. "I'm not trying to paint us as impoverished, but the cash is very low," he says. "With two children, we can't afford a flashy lifestyle."

The vanguard of the baby boom, always quick to change, will continue to lead its generation into new spending opportunities. But they've got 20 years of orthodontia, private school tuitions, and Princeton educations ahead of them. Goodbye, Häagen-Dazs. ■

Larry Woods gets the fish eye in an Alabama takeout store.

MIKE CLEMMER—PICTURE GROUP

C8900-1
4/10/89

APRIL 24, 1989

$1.95

FORTUNE

THE FORTU

THE LARGEST
U NDUSTRIAL CORPORATIONS

*105G**********5-DIGIT 20814
#S99ES520SS91#5 Y520814 JUN91
SR1 CNGRSSN INFO SVC MDOORE**
4520 EAST-WEST HWY #026491
BETHESDA MD 20814 PL002295

0 72440 10093 0

APRIL 24, 1989
VOL. 119, NO. 9

FORTUNE

500 COVER STORIES

THE U.S. GETS BACK IN FIGHTING SHAPE 42
Forget about American manufacturers turning into worldclass wimps. *by Alex Taylor III*

SECRETS OF THE SUPERSTARS 50
The most profitable FORTUNE 500 companies have a few pointed messages to deliver about product quality and costs. *by Carol J. Loomis*

CEOs GIRD FOR GLOBAL BATTLE 65
In this FORTUNE 500/CNN Moneyline CEO Poll, business chiefs say they'll conquer with quality and productivity. *by Brian Dumaine*

GROWING FAST ON THE 500's FRINGE 69
These 25 companies are the hottest prospects on the farm team. *by Peter Nulty*

A NEW ERA OF RISE AND RUIN 77
Modern business has never seen anything like it: In just five years over 100 companies have been replaced on the FORTUNE 500. Where did they go? Ask your friendly mergers and acquisitions specialist. *by John Paul Newport Jr.*

FACTORIES THAT SHINE 92
U.S. plants are now giving foreign competitors some lessons. *by Anthony Ramirez*

Photographer Gerd Ludwig captures a Worthington Industries worker checking steel thickness.

COVER: The 500 was constructed by Nicholas Fasciano and photographed by Roberto Brosan.

"I think we made a gross error, which won't be repeated."

PAGE 16

"Being separated from my life's work is an extremely difficult step."

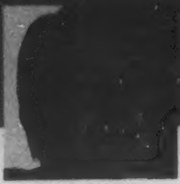
PAGE 16

"Keep your eye on the product. That was all-important to me."

PAGE 50

"We're fooling ourselves if we think a lower dollar is the answer to the trade deficit."

PAGE 65



"We wouldn't *think* of copyrighting our ideas. Anyone is welcome to them."

PAGE 113

"If we can supply Motorola, we can supply God."

PAGE 157

MANAGING

THE EVER-BIGGER BOOM IN CONSULTING 113

The demand for advice is surging worldwide, fees are heading higher, and new competitors are slugging it out for clients. *by Anne B. Fisher*

READY FOR YOUR ANNUAL MEETING? 137

Though the most important shareholders seldom show up, the gadflies do. Preparation is your secret weapon. *by Christopher Knowlton*

CORPORATE PERFORMANCE

WHAT MOTOROLA LEARNS FROM JAPAN 157

The company's self-proclaimed bandits "borrow" their Asian rivals' ideas. *by Ronald Henkoff*

RUCKUS IN THE REDWOODS 172

Critics liken Houston raider Charles Hurwitz's management of Pacific Lumber to a Texas chain saw massacre. *by Ellen Schultz*

COMPANIES TO WATCH 188

MONEY & MARKETS

CUTE TRICKS ON THE BOTTOM LINE 193

The figures you've been reading in the latest annual reports are no more trustworthy than last year's, and it isn't just little guys playing games. How about GM and GE? *by Gary Hector*

THE ECONOMY

A LATIN DEBT PLAN THAT MIGHT WORK 205

Secretary Brady's proposal lays out a plausible scheme for solving the monstrous problem. But it will work only if the debtor countries, which now owe a total of $1.3 trillion, clean up their messy economies. That's a big if. *by Jeremy Main*

COMPENSATION

TAKE THE MYSTERY OUT OF CEO PAY 217

Too many dollars get concealed in proxy statements—or aren't reported at all. Companies should have to tell shareholders more.
by Graef S. Crystal and Francis T. Vincent Jr.

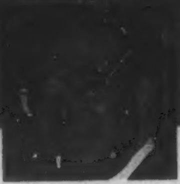
SPECIAL REPORT

THE FORTUNE 500

Stories and indexes start on page 345

- **THE BIGGEST BLOWOUT EVER 346**
  Presenting the most prosperous 500 since FORTUNE published its first directory in 1955. *by Reed Abelson and Rahul Jacob*
- **THE FORTUNE 500 LARGEST INDUSTRIALS 354**
- **DEFINITIONS, EXPLANATIONS, AND NOTES 376**
- **ARRIVALS, DEPARTURES, AND MONEY LOSERS 377**
- **THE 500 RANKED WITHIN INDUSTRIES 380**
- **INDUSTRY MEDIANS AND TOTALS 394**
- **ALPHABETICAL INDEX 398**
- **MIGRATORY HABITS OF THE 500 400**
  The Northeast used to have a hammerlock on headquarters of the largest industrial companies. No more. Here's where they're flying and why. *by Alan Farnham*

Contents continued on page 5



"Reward: $1,000 for information leading to the arrest and conviction of Charles Hurwitz."

PAGE 172

"Brady pushed the bankers and the debtors off the cliff, hoping someone will put some water in the canyon."

PAGE 205

"It's barbaric what you're asked to sacrifice to make the team."

PAGE 265

"I did what I was paid to do—get value for shareholders."

PAGE 296

"To avoid premature death through starvation I need to eat some 25 million calories. Why not get on with it?"

PAGE 319

"We assess where a [radio] station is, who its listeners are, and make our move."

PAGE 320

SELLING

SOARING SALES AT DUTY-FREE SHOPS 225

Their customers have time on their hands and a yen for designer goods. *by Henry Weil*

TECHNOLOGY

MANAGING WITH ELECTRONIC MAPS 237

They can help sell soft drinks, produce oil, and break up traffic jams. The systems are getting cheaper and more popular. *by Gene Bylinsky*

THE WORLD

JAPAN'S RISING DEFENSE INDUSTRY 257

Its military contractors want to waive the rules that ban overseas sales, and some are pressing for more spending at home. Should U.S. companies be worried? *by Carla Rapoport*

LOOKING AHEAD

HOW TO QUIT LOSING IN THE OLYMPICS 265

If the U.S. wants more gold in 1992, the system needs fixing—now. *by David J. Morrow*

COMPETITION

ASIA'S RELUCTANT GROWTH CHAMPS 283

Thailand and Malaysia are coming up fast. But don't call them NICs. *by Ford S. Worthy*

SPECIAL REPORT

HOW ROSS JOHNSON BLEW THE BUYOUT 296

The untold story of how his own naiveté, a disastrously flawed strategy, and Wall Street's towering egos combined to doom a CEO's bid for glory in the biggest deal of all time. *by Bill Saporito*

DEPARTMENTS

EDITOR'S DESK 6

INDEX 11

NEWS/TRENDS 16

Exxon befouled, Mike Milken's chance to break new ground, management consultants for the Soviet Union, the boom in airplane sales, and more.

FORTUNE FORECAST 23

Households and homebuilders will handily survive high interest rates. *by Maureen F. Allyn*

PERSONAL INVESTING 29

Toys, tobacco, and metals lead a comeback in FORTUNE 500 stocks. *by Andrew Evan Serwer*

Also: Why Hershey Foods looks sweet and Portfolio Talk with Alan Greene of New York's David J. Greene investment advisory firm.

FORTUNE PEOPLE 319

Kemmons Wilson jumps back in to the hotel business, Jack Simplot's new stock plan, and Warren Buffett's favorite recipe. *by Mark Alpert*

ON THE RISE 320

OTHER VOICES 323

George L. Priest of Yale Law School inveighs against liability costs, and John R. Graham tells why cold calls from brokers leave him cold.

BOOKS & IDEAS 329

Jeffrey Sonnenfeld shows how CEOs cope with retirement: For many it means "a plunge into the abyss of insignificance." *by Roderick Gilkey*

LETTERS TO FORTUNE 333

Recollections of GE's Jack Welch from his former employees, the question of sabbaticals, ethics and the elderly, and cheers for Cleveland.

KEEPING UP *by Daniel Seligman* 339

EDITOR'S DESK

READING the hefty issue you hold in your hands is an annual rite of spring for corporate America. The FORTUNE 500 directory of the largest U.S. industrial corporations—to be followed in the June 5 issue by the directory of the 500 largest service companies—forms the centerpiece of one of the most eagerly awaited and closely read issues we print all year. For good reason. These annual rankings, the original and the most authoritative of their kind, measure the financial performance of America's industrial giants—the redwoods of the business landscape.

JOHN S. ABBOTT

Editor Geoffrey Colvin, front left, and the FORTUNE *500 team*

More than ever, the FORTUNE 500 makes fascinating reading this year. The companies on the list turned in their best performance in history. Benefiting from a strong economy and the salutary effects of continued restructuring, nearly all our 27 industry groups set new records for profitability. The total profits of the 500 rose almost 27%, to a remarkable $115 billion.

Complementing the directory is a bouquet of stories that examine the causes and implications of those handsome numbers. In the lead article Alex Taylor assesses the current state of U.S. industrial companies and finds them gaining on global competitors. Carol Loomis looks at the star corporate performers on the list over the past ten years and pinpoints the reasons for their superb records.

Next, reporting on our exclusive poll of FORTUNE 500 and Service 500 chief executives, Brian Dumaine describes the big bosses' prescriptions for outperforming foreign competitors. Then Peter Nulty writes about the smaller companies scrambling to make next year's list and uncovers a host of strategies for growth. John Paul Newport examines the great rush of dealmaking that moves companies on and off the list like poker chips, faster than ever before. And, finally, Anthony Ramirez leads you on a tour of the country's finest factories, each equipped to take on the world.

FORTUNE *Italia editor Andrea Monti*

MAURO GALLIGANI

The theme uniting this package, says Geoffrey Colvin, who nine years ago compiled the FORTUNE 500 as a reporter and this year served as the issue editor, is America's return to world industrial competitiveness. Says he: "A lot of people still don't believe this is happening, but the performance of the 500 is strong supporting evidence."

Unlike our imitators, FORTUNE has been gathering and scrutinizing this information for 34 years. Chief of reporters Evelyn Benjamin, who has overseen all of FORTUNE's lists for half those years, notes that the longevity of our directory has created a wealth of consistent historical data. Citing the directory's elegant methodology—the ranking by sales and the division by industry categories—she adds, "There is no responsible competition for these lists out there."

With its 20,000 pieces of information, the directory is the product of months of painstaking research. In January reporter Reed Abelson and Rahul Jacob began combing sales and earnings reports, news stories, and other sources for possible newcomers to the list. The task of gathering, checking, and double-checking questionnaires sent to each company takes eight weeks and often involves as many as 40 phone calls a day. At 4:30 A.M. on Easter morning Abelson and Jacob were still at their devotions, proofreading the final numbers. Says Jacob: "I felt as if I were back in graduate school cramming for exams."

How's your Italian? This spring we also hail FORTUNE *Italia*, a monthly edition of FORTUNE published in that language. More than 100,000 copies of the first issue hit newsstands from Venice to Palermo on March 30. FORTUNE *Italia* is a joint venture of Time Inc., the publisher of FORTUNE, and Italy's Arnoldo Mondadori Editore, which produces 24 other magazines, including *Panorama*, *Grazia*, *Epoca*, *Marie Claire*, and *Espansione*. A Milan-based editorial staff led by Andrea Monti, an ebullient editor full of ideas, will offer original articles and adapt others from our English-language editions.

FORTUNE *Italia* is the third member of our foreign-language family. Fourteen months ago FORTUNE *France* appeared, a joint venture with the Hachette Filipacchi group, which owns *Elle*, *Paris Match*, and *Le Nouvel Economiste*. We have published *President* magazine in Japanese in partnership with Diamond Publishing Co. since 1963. We are proud of them all—and plan to reach more people in more languages in the future.

Marshall Loeb

MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President; Michael J. Klingensmith, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, Fl. 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-541-1000.

© 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company.

THE VALUES OF THE AFFLUENT

■ According to a new survey, 94% of people with household incomes topping $100,000 a year attribute their good fortune to hard work. Only one out of six cited "a willingness to cut corners or shave the truth" as an advantage in getting ahead.

This admirable dedication to labor apparently has transformed the microwave into a basic necessity for the rich. Says William Doyle, head of **Doyle Graf Raj**, the New York ad agency that sponsored the survey: "Any electronic device that saves time will have high sales." **– Wilton Woods**

WHAT THEY THINK THEY NEED

Microwave	57%
Home computer	42%
Financial adviser	25%
Private school for children	25%
Vacation abroad	19%
Car phone	14%
Country club	8%
Fur coat	6%

SOURCE: DOYLE GRAF RAJ/THE ROPER ORGANIZATION

THEIR HEROES

PHILIPPE HALSMAN

Einstein

LOUIS PSIHOYOS—MATRIX

Iacocca

MARY ELLEN MARK

Mother Teresa

them. The instructor lost no time in working on attitudes. "You are late because you left home too late," he shouted. "The responsibility is yours!" Everyone arrived on time the next day. **– Patricia Sellers**

THE BUG SUCKER

■ It's a giant vacuum cleaner. But instead of attacking grime, this one gobbles up the bugs that infest produce—and then spits them out as mulch. The contraptions go for up to $16,000 (the tractors cost extra), and sales may pick up because of tainted-food scares. "Bug Vac" technology has enabled some California strawberry and lettuce growers to cut their pesticide use over 40%.

The vacuum was the brainchild of **Driscoll Strawberry Associates**, a cooperative of growers in Watsonville, California. The company worked with Michael McCluney, an equipment maker, to produce the prototype, designed to inhale the lygus bugs that attack berries.

One of the largest independent lettuce growers, **Tanimura & Antle** of Salinas, California, then modified the design to get at the bugs and worms in lettuce. McCluney knows bug vacuums are not about to make pesticides obsolete. Says he: "It is a successful experiment, but it's still an experiment." **– J.L.**

The question is eternal: How many bugs can a bug sucker suck?

RICHARD STEVEN STREET

GORGING ON BOEING'S SCRAPS

■ Emboldened by higher profits and worried about aging fleets, U.S. airlines are ordering more new planes than **Boeing** can make. "If you wanted to order a Boeing airliner today," says Chairman Frank Shrontz, 57, "you would have to wait three years or more for delivery." As a result, says Paul Nisbet, an aerospace analyst at Prudential-Bache, "the airliner business has become a sellers' market." All the commercial-airframe manufacturers are bulking up on the business Boeing can't handle. Last month, for example, the European joint venture **Airbus Industrie** snagged a $3.6 billion order from Carl Icahn's **TWA**, which wants 40 new wide-bodies starting in 1994. Boeing couldn't deliver its aircraft that soon.

Another producer that is delighting in the mild new competitive climate is **Fokker Aircraft** of the Netherlands, maker of the famed Red Baron's World War I plane. **American Airlines** decided to buy $3 billion of 100-seat Fokker jets for use on its lightly traveled routes, instead of a version of the Boeing 737 that holds the same number of passengers. That comes to 75 planes now, plus an option to buy 75 more. President Reinder van Duinen says the new business nearly doubled his order book in a single stroke. None too soon: Fokker flew into trouble a couple of years ago developing its new generation of planes and has since depended on government aid to keep aloft.

McDonnell Douglas is getting its share of the bounty: **Delta** has signed up to buy more than $9 billion of its aircraft over the next decade, and last week **Midway Airlines** put in for $1.7 billion of new jetliners. But there are limits. Says Helane Becker, an airline analyst at Shearson Lehman Hutton: "If any manufacturer tried to add another production line now, its suppliers couldn't keep pace." **– W.W.**

GIVING CREDIT TO THE RETIRED

■ Already a powerhouse lobby in Washington, the **American Association of Retired Persons** may soon emerge as a leader in personal finance. A credit union AARP launched in May is breaking all records for first-year deposit growth. It has enrolled 36,000 members and gathered $66 million of deposits; if just 4% of AARP's 30 million members signed up, the credit union would become America's biggest.

People at some other credit unions expect more than that to happen. Estimates of AARP's potential growth in their business range as high as $20 billion of assets by 1992. This compares with the $3.6 billion held by Navy Federal, the current leader, which takes deposits from people associated with the U.S. Navy.

Banc One of Columbus, Ohio, processes the checks, Visa card charges, and other paperwork for the credit union.

THE U.S. GETS BACK IN FIGHTING SHAPE

Forget those lurid tales about American manufacturers turning into worldclass wimps. The truth is, they measure up better every day against foreign competitors. ■ *by Alex Taylor III*

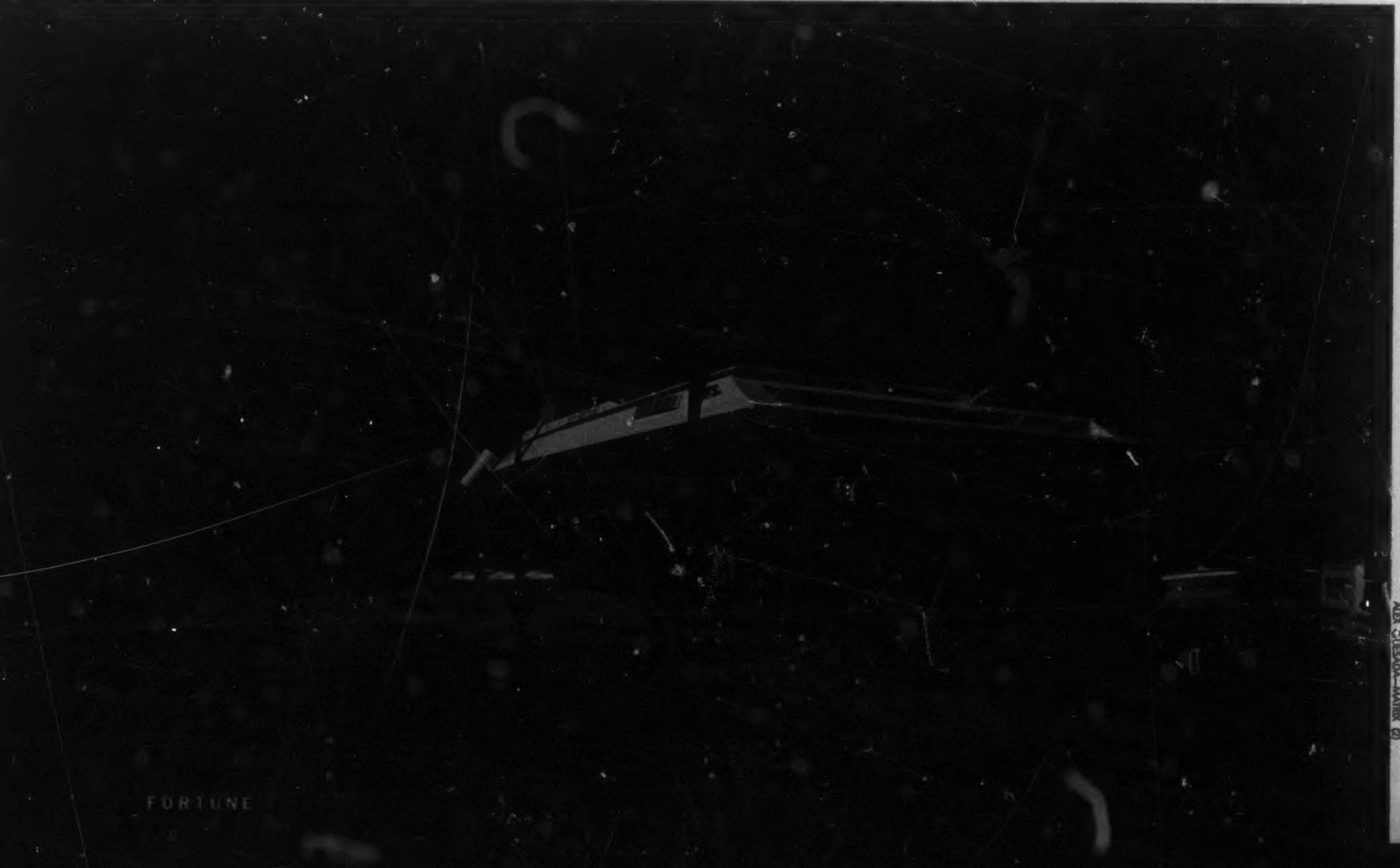
AMERICAN INDUSTRY—a Gulliver in Lilliput, a feeble giant hamstrung by canny Asians and newly energized Europeans? There never was much truth to that idea, and these days it's downright absurd. The U.S. is gaining ground against global competitors, not losing it. The cheap dollar gets some of the credit, of course. But the FORTUNE 500 industrial companies—and some smaller manufacturers as well—have made long strides in productivity, management, quality, and cost control. They are blasting their way into new foreign markets and grabbing customers from overseas competitors. More than a few U.S. companies—notably in computers, pharmaceuticals, and telecommunications—are extending their worldwide leads.

The evidence of growing U.S. clout permeates the latest trade reports. In the past year American exports have risen a near-record 26%, with steel, aluminum, and lumber providing the biggest push. In January, for the first time in five years, the U.S. sold more goods to Western Europe than it bought. Analysts at the Commerce Department say exports would have grown even faster had they not bumped up against temporary capacity limits.

The trade deficit figures, long considered the fever chart of U.S. industrial sickness, shrank from $152 billion to $120 billion last year, a 21% decline. The number might have fallen further except that imports are still rising at an annual rate of 10%. That's not all bad, however: U.S. companies, which had let their plants and equipment run down, have ratcheted up investment and are buying lots of machinery overseas.

Among the 24 members of the OECD, which include the world's industrialized powers, the U.S. is making the biggest export gains. It is ahead of No. 3 Japan in total export volume and catching up with

FORTUNE 500 companies lead the competitiveness revival. Spanish workers unload a motorboat made by Outboard Marine (No. 235).



ALEX QUESADA—MATRIX (2)

Germany. This year, while the export share of nearly every other OECD country is expected to fall, the U.S. component is heading toward a 25-year high. FORTUNE's economists expect overseas sales to go up another 7% in volume over the next 16 months.

THE BIGGEST winners from the 30% depreciation of the dollar since mid-1985 have been such worldclass exporters as airplane and computer makers, who have increased the demand for their sought-after products by cutting prices in foreign currencies up to 50%. Traditional homebodies such as food processors and toy manufacturers are discovering the allure of overseas markets. ConAgra is making a big push in Japan, where it is increasing shipments of seafood, frozen food, beef, and grain. Hasbro has found a worldwide market for its best-selling G.I. Joe.

For industrial companies of FORTUNE 500 heft, setting up factories abroad is often better than exporting. That way they get closer to overseas customers and simultaneously insulate themselves from currency swings. While the dollar was falling Americans were building smokestacks abroad, and now they are savoring the payoff.

Scott Paper, already up and running in France and Belgium, is adding paper machines in Belgium, Italy, and Spain, and raised European sales from $900 million in 1987 to over $1 billion in 1988. Europeans have customarily consumed less toilet paper and fewer paper napkins and hankies than Americans because those products were expensive and the quality was poor. Scott figures that consumption will rise substantially over the next four years, and with its superior papermaking technology it expects to absorb 60% of the increase.

Scott has even grander plans for Asia (see Competition). It wants to plant 250 million eucalyptus trees on a remote 345,000-acre tract in Indonesia to produce pulp. The company is moving more cautiously than did billionaire Daniel Ludwig, who leveled huge tracts of Amazonian land in 1967 only to discover that the soil was too thin to grow the kind of trees he wanted. Scott plans to plant 21 million seedlings annually for 14 years. When the trees are ready to be harvested, the company will erect a pulp mill nearby with a capacity of 1,000 metric tons a day.

ALEX QUESADA—MATRIX (2)

USX (No. 23) rolled steel headed for Japan

Reynolds Metals, which was closing aluminum smelters five years ago, is adding fabricating machinery in Belgium, Brazil, Italy, Spain, and West Germany. Like Scott, Reynolds is trying to prime a nascent market. Western Europe consumes only one-twelfth as many aluminum beverage cans as the U.S. does.

THE COMEBACK in American competitiveness is forcing experts to reconsider the events of the past 15 years. Economist A. Gary Shilling, who runs his own New York City consulting firm, now views most of the 1980s as a transition between the excess demand that erupted after World War II and the overcapacity that more recently inundated markets around the world. During the transition, many U.S. companies became temporarily exposed as the high-cost, low-quality producers. "We were naked as the proverbial jaybird," says Shilling. "It is a very tough road back, but we are correcting for not just years of mistakes, but decades."

In retrospect, the hard times U.S. manufacturers suffered in the 1970s and early 1980s may have been only the symptoms of a cyclical change, not a permanent reordering of the world economy. No one expects America to start making lots of T-shirts or radios again. But critics have tended to tar all manufacturers with the brush they used for automobiles, steel, machine tools, and semiconductors—the backbone of any modern industrial economy and thus the biggest weapons of international trade. Even in these once beleaguered businesses, an upturn is finally visible.

Japanese buying Cross pens in Singapore

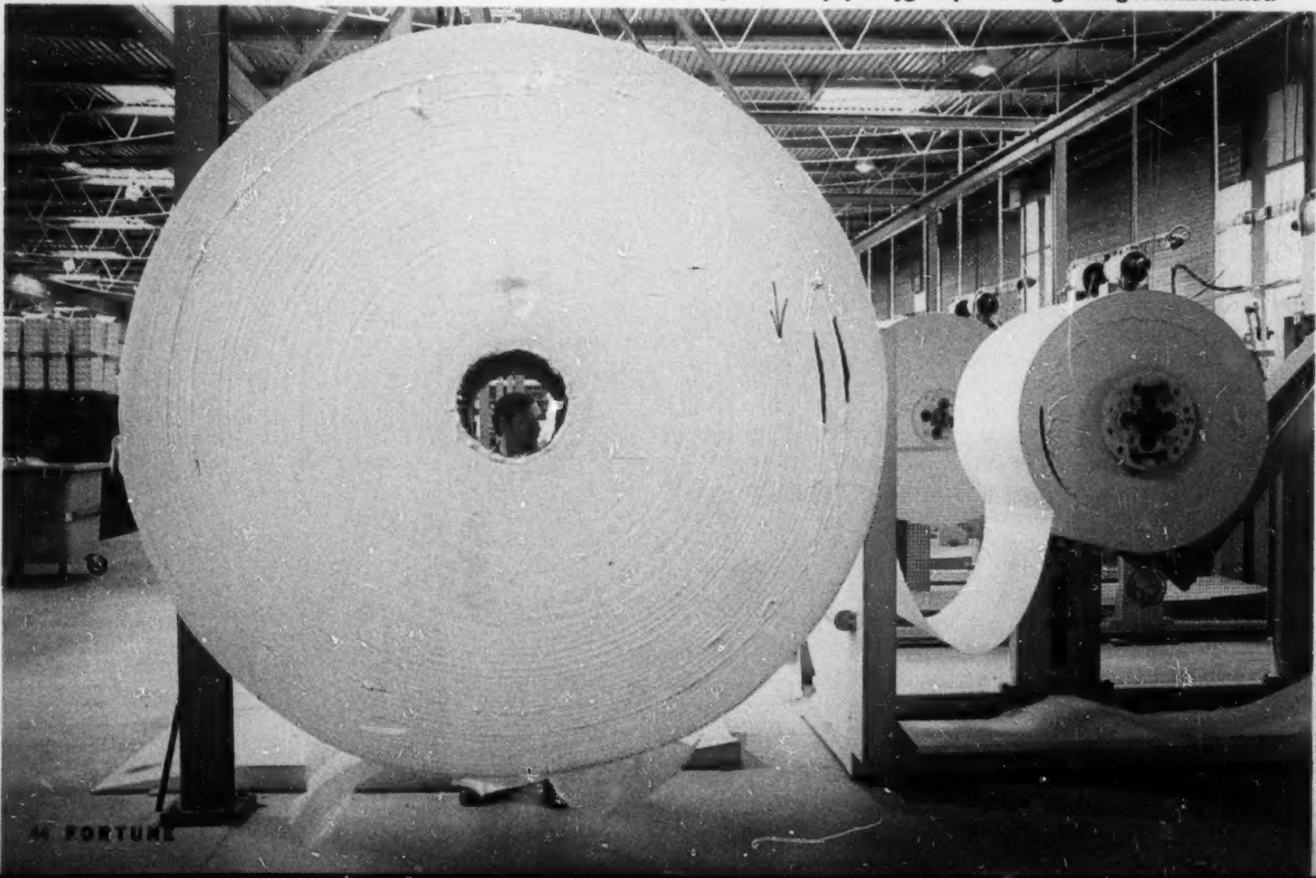
R. IAN LLOYD

What gets overlooked are success stories like Timken's. The Japanese were driving the Canton, Ohio, maker of roller bearings to the wall in the early 1980s, so it redoubled efforts to make its products more competitive. Says President Joseph Toot: "Bad products or management weren't the problem, so it would have been foolish to go out and try something we had never done before." Timken cut prices 30% and increased quality enough to lengthen the guarantee on its truck axles from 100,000 miles to 500,000 miles. The company started selling to Japanese manufacturers in 1987 and expects to make big gains there this year (see "Factories That Shine").

Here's a closer look at five important areas where U.S. manufacturers are making big gains that are paying off in world competitiveness:

PRODUCTIVITY. In recent years, international comparisons made U.S. productivity appear worse than it was. As the second leg of the postwar economic boom roared along from 1960 to 1973, Western European countries and Japan posted annual productivity gains ranging from 6.6% to 10.3%. Because the U.S. had been running at full speed since the early 1950s, its annu-

This two-ton roll at Scott Paper's Orléans plant will be cut into some 30,000 packets of *papier hygiénique* for the growing French market.



JULIO DONOSO—SYGMA

al increases of 2.9% looked puny by comparison. When worldwide recession took hold in the 1970s, the U.S.'s relative position continued to slip.

Yet the U.S. remains the world leader in per capita national output, with Germany and Japan lagging far behind. Each U.S. worker accounts for $33,000 in gross national product today vs. $24,000 in 1960, measured in constant dollars. "Productivity in most U.S. industries is still higher than in any other country in the world," says Gerald Godshaw, who heads long-term forecasting for Wharton Econometric Forecasting Associates (WEFA) in Bala Cynwyd, Pennsylvania. In the last half of the 1980s the U.S. has been coming on strong. U.S. manufacturing productivity grew at only one-quarter the Japanese rate from 1980 to 1982, but it rose 75% as fast in the years from 1983 to 1987. West German productivity increased only half as rapidly as Japan's in the same period. Says Janet L. Norwood, commissioner of labor statistics: "In the past 28 years, the comparative productivity of our factories has careened from problem to crisis to—possibly—a renewed position of leadership."

American manufacturers are making productivity gains in industries once regarded as mature, according to data compiled by WEFA. In lumber, for example, the U.S. limped along between 1978 and 1983 with annual increases of 1.5%, measured in 1982 dollars. Then productivity more than doubled, rising 3.6% on average in each of the next five years. In primary metals like steel and aluminum, annual productivity changes shifted from −2.8% to +6.5% over the same period.

Some forecasters predict that robust gains in productivity will continue for the next decade. Godshaw of WEFA looks for annual productivity increases averaging 4.4% in electrical machinery and 4.3% in textiles, for example. Overall, he expects durable-goods productivity to climb 3.6% a year through the 1990s.

Better workers help too. Though the idea defies conventional wisdom, Norwood insists that America's work force "is the most productive in history." More than one in four adult workers has a college degree, up from one in five a decade ago. Reports of a brain drain have been exaggerated. Employment in science and engineering has been growing at a healthy 6.3% annual clip for more than a decade. Scientists and engineers make up 2.8% of the U.S. labor force, compared with 2.5% in Japan.

The U.S.'s worldwide lead in computers gives a huge kick to productivity in the economy as a whole. By WEFA's calculations, productivity in that industry has shot ahead 14.7% annually, on average, in the past five years. Despite strong international competition, American computer companies are striving to maintain their advantage. Compaq, the upstart maker of IBM-compatible personal computers, more than doubled its overseas sales to $800 million last year.

MANAGEMENT. U.S. manufacturers are also reaping the benefits of changes made at home—those painful reorganizations undertaken to rip apart top-heavy management and improve response time. Daniel Valentino, president of United Research, a Morristown, New Jersey, consultant to a number of large manufacturers, views the slump of the early 1980s as the consequence of progress along the learning curve as companies eliminated management by function and installed decentralized management by business unit. "What we did was take a whole set of functional managers and throw them up against the wall," he says. "The ones who adapted to a general management role are now helping us close the competitiveness gap."

That has clearly been the experience at Eastman Kodak. CEO Colby Chandler figures the Yellow Father lost $3.5 billion in worldwide sales from 1981 to 1985 to competitors such as Fuji Photo Film. So he reorganized Kodak's entire $17-billion-a-year operation into 34 strategic business units. Managers who once perched atop a marketing or production pyramid took charge of a single unit and ran it worldwide. Last year almost every unit, from color film to copiers, gained market share. Kodak's exports leaped 23%, to $2.7 billion.

QUALITY. The goods Americans sell overseas are far better made than they used to be. Witness that longtime invalid, automobiles: Though both General Motors and Ford have large overseas operations, Detroit doubled its export sales last year. The Germans, who have a long-term love affair with the Jeep Cherokee wagon, are falling for Chrysler's minivan, which began arriving there last year. Consultants and academics now suggest that by the early 1990s, U.S. car plants really will be turning out vehicles that are nearly the equal of Japanese autos in fit, finish, and durability. European producers are making much smaller quality gains.

continued

A DOZEN TOP GLOBAL PLAYERS

COMPANY	FOREIGN SALES AS % OF TOTAL	BEST-SELLING PRODUCT ABROAD	BIGGEST MARKET ABROAD
BOEING	46%	COMMERCIAL AIRLINERS	WESTERN EUROPE
CATERPILLAR	50%	EARTHMOVING EQUIPMENT	WESTERN EUROPE
DOW	55%	INDUSTRIAL CHEMICALS	CANADA
EASTMAN KODAK	45%	AMATEUR FILM	BRITAIN
FORD MOTOR	25%	ESCORT SUBCOMPACT	BRITAIN
GENERAL ELECTRIC	22%	AIRCRAFT ENGINES	WEST GERMANY
HEWLETT-PACKARD	52%	COMPUTER WORKSTATIONS	WEST GERMANY
MERCK	50%	VASOTEC (BLOOD PRESSURE MEDICATION)	N.A.
OUTBOARD MARINE	20%	OUTBOARD MOTORS	CANADA
SCOTT PAPER	38%	BATHROOM TISSUE	WESTERN EUROPE
SUN MICROSYSTEMS	42%	COMPUTER WORKSTATIONS	JAPAN
3M	46%	PRESSURE-SENSITIVE TAPE	WEST GERMANY

REPORTER ASSOCIATE *Susan Caminiti*

Some Americans are also making up lost ground against the Japanese in semiconductors. "The rising sun has hit a peak in the sky," proclaims T. J. Rodgers, the hyperaggressive CEO of Silicon Valley's Cypress Semiconductor. The key here is improving the yield of chips on the silicon wafers used to form them. In the past, U.S. chipmakers have gotten only 20% to 30% yields of usable static random access memory chips per wafer, compared with 80% to 90% for the Japanese. But Cypress now achieves a 70% to 80% success rate.

The Japanese can't compete because they cannot afford to ship an 18-foot runabout 10,000 miles.

The Japanese have been eating Americans for lunch in the production of the common memory chips known as dynamic RAMs. Back in the mid-1980s, Japanese chipmakers generated revenue of at least $200,000 per employee, vs. $60,000 to $70,000 at Intel, a leading U.S. producer. But Intel has borrowed manufacturing techniques from the Japanese, doubling revenue per employee to $138,000—vs. $230,000 for the Japanese today. Along with Motorola and Texas Instruments, Intel is making important inroads in Japan's once impenetrable home market.

Specialty goods makers are also prospering. Penmaker A.T. Cross reluctantly launched a fountain pen in Europe in 1982 because many Europeans do not use ballpoints. To its surprise, Cross found that its quality reputation carried over to the nib pen as well. It was so successful that Cross brought it back to sell in the U.S. Cross has no such problems in the Far East. It is a leader in Singapore, where it has been selling ballpoints for more than 20 years.

COST CONTROL. Stung above all by Japanese encroachment on their traditional markets, U.S. manufacturers have counterattacked with a vengeance. In 1984 Henry Schacht, CEO of Cummins Engine, discovered that two key American truck builders, Navistar and Freightliner, were thinking about replacing his diesels with low-priced Japanese power plants. Schacht immediately slashed prices 30%. To get profits back, he cut production costs 20% by changing manufacturing techniques, buying castings and forgings abroad, and reducing factory floor space by one-quarter. The sinking dollar provided the other 10% by allowing him to restore part of the price cut and still undersell his competitors. By 1988 Cummins had recovered all its old truck engine profit margins, though it wound up losing money overall.

Outboard Marine also used deep price cuts to fend off a Japanese assault in Europe on its Evinrude and Johnson outboard motors. It laid off 2,000 people—25% of its nonproduction work force—so it could match prices offered by the likes of Honda and Yamaha. Margins suffered, but Outboard Marine repelled the invaders. Now the company, which also owns several boatmakers including Chris-Craft, has a new gambit: marketing boat-and-motor packages in Europe. The Japanese can't compete because they cannot afford to ship an 18-foot runabout 10,000 miles.

U.S. manufacturers are generally doing a better job keeping costs down than foreign competitors are. They are getting a better hold on labor rates. In the first eight years of the 1980s, hourly compensation for U.S. manufacturing workers grew on average only 5.7% a year, vs. 8% overseas, and because of productivity increases unit labor costs in the U.S. have been virtually flat for the past three years.

Though they are starting to turn up again, labor costs should give the U.S. a sharper edge in the future. Management sage Peter Drucker argues that wage levels are becoming less relevant in world competition because their share of total production costs is shrinking. Drucker says the pay of U.S. hourly workers accounts for only 18% of costs at the average plant, not including the labor component in the raw materials used. That's down from 23% a few years ago. Going offshore usually carries hidden costs—a penalty of 7.5% for transportation, communications, and the like—so low-wage foreign producers are beginning to lose their edge.

Going offshore carries hidden costs, so low-wage foreign producers are beginning to lose their edge.

CAPITAL INVESTMENT. Measured by the ratio of investment to manufacturing employees, the U.S. outspent both Japan and Germany from 1980 through 1986. The investment-to-worker ratio reflects the speed with which companies are bringing new technology into manufacturing—a key ingredient in global success. The Federal Reserve Bank of New York predicts that investments already made will improve U.S. productivity for some time, since the lag between investment and more efficient output is often several years.

Heads-up investment can produce large dividends, as the U.S. steel industry has proved. The mini-mills that spent heavily on technologically advanced electrical furnaces are less capital-intensive and more productive than conventional integrated mills. Chaparral Steel operates America's most productive new mill, in Midlothian, Texas, and exports steel beams to Europe and Canada. It expects an official go-ahead to supply structural steel for Japanese public projects, which would make it the first company other than South Korea's Inchon Iron & Steel to be able to do so.

AS THEIR CRITICS are quick to point out, U.S. industries still have some distance to travel. Asia's fast-rising Four Dragons—South Korea, Taiwan, Hong Kong, and Singapore—remain the world leaders in productivity improvement. Many technologists see an urgent need for greater industry-government cooperation to prevent a shortfall in research and development spending as well as a shortage of engineers and scientists. "We need a cohesive world view through which to filter and market our technology development," argues Thomas Vanderslice, CEO of Apollo Computer, a leading workstation maker. "Only a coordinated effort involving government, business, and academia can achieve it."

Whether Vanderslice is right or not—and lots of people would give him an argument—it is long past time to take off the hair shirt. U.S. industry has accelerated enormously in the past few years, and even if the dollar continues to creep upward, further payoffs are yet to come from other improvements already in the works. Maintaining competitive supremacy, however, is like speeding down an endless highway. The smart drivers keep their feet to the floor.

SECRETS OF THE SUPERSTARS

The most profitable FORTUNE 500 companies of the last ten years have a few pointed messages to deliver about product quality, costs, and sticking to what you know best. ■ *by Carol J. Loomis*

ELISABETH CLAIBORNE AND ARTHUR ORTENBERG

LIZ CLAIBORNE

■ *She, 60, is chairman, president, and CEO; he, 62, is vice chairman. Together, as husband and wife, they built the classy fashion-apparel company that ranks first on FORTUNE's list of stars.*

"WHY DON'T WE do this more often?" the 500 largest industrial companies might say of 1988, a year of splendid profitability. "*We do,*" 21 members of the group could answer. These are the stars of the FORTUNE 500 identified by this magazine in a special study of sustained profitability. Some are relatively new to the list, such as Liz Claiborne and Commerce Clearing House, and some have been standouts there for many a year. In general, these are the rich of big business and, yes, they are different. Just look at their stellar stock performance. But their behavior beams down important messages to all managements.

We picked out these 21 by looking at return on equity—the ratio, that is, of after-tax profit to stockholders' equity—which is a fundamental guide to how well a company's management is employing the owners' money. Our span of measurement was ten years. To shine as a star, a company had to have averaged at least a 20% return on year-end equity over the 1979-88 decade and been so consistent that it never dropped below 15%. We knocked out companies that met the tests only because they sold off assets. In other words, we were looking for year-in, year-out performers.

The standards are rigorous. We know that because we have some fallen stars from a 1984 study to lament. We know it also because the FORTUNE 500 as a whole has earned far less: Its median return on equity over the 1979-88 decade averaged only 13.3%. Further, logic proclaims that a long-running 20% is a marvelous thing. It is equivalent to a 20% savings account, on which part of the return is typically paid out as dividends and some is retained, also to earn 20%. Where else can an investor park money and share in such earnings?

Breaking into stardom was especially tough when FORTUNE made its first sweep five years ago. We were then examining a decade, 1974-83, that hammered business, testing it with no fewer than three recessions, rising energy prices, and pervasive inflation. Only 13 companies among the 500 industrials met our tests.

Why more now? First, this last decade, which included the longest peacetime economic expansion ever, was *easier.* Second, some of today's stars, like the rest of the corporate world, have increased their use of debt and thereby bolstered their returns on equity. Third, a kind of pseudo-shareholder, the U.S. government, helped out by cutting corporate tax rates, from 46% to 34%, thus reducing its share of the profit pie.

Even so, from top to bottom this is a financially superb assembly of companies, which share certain characteristics. Most are quality obsessed, cost conscious, and driven to be even better than they are. They tend to be conservative in capital structure; none owe their place among the stars to a sliver of equity and a slab of debt.

They can afford to be conservative. Most enjoy a flood of cash every year, thrown off by some of the most rewarding operations in the world. On page 60, in fact, we present a first-time-ever ranking that draws on the segment data presented in annual reports and spotlights the best—and worst—businesses of these 21 best companies. Can you begin to comprehend an operation that annually makes nearly 300%, pretax, on assets? One company claims such performance—and the reality, as you will see, is even better than the claim.

The problem with the cash these businesses throw off is that it has to be invested. Most of the 21 contend with this enviable headache day in, day out, and in their "solutions" have often proved strikingly inept. For all their excellence in other ways, many have erred by not sticking to their knitting.

The exemplar in FORTUNE's galaxy is Liz Claiborne Inc., whose ten-year average

To make this elite assembly, a company had to have averaged at least a 20% return on stockholders' equity over the past ten years and never have dipped below 15%.

RICHARD T. MERRILL
COMMERCE CLEARING HOUSE

■ *By way of CCH's reports and computations, President and CEO Merrill, 60, has made super financial returns off others' tax returns.*

A GALAXY OF FORTUNE 500 STARS

	COMPANY	RETURN ON EQUITY 1979–88		
		Average	BEST Year	WORST Year
1	LIZ CLAIBORNE	40.3%	71.0% 1979	24.1% 1988
2	COMMERCE CLEARING HOUSE	38.8%	67.7% 1979	23.0% 1988
3	KELLOGG	31.9%	51.4% 1984	24.6% 1979
4	AMERICAN HOME PRODUCTS	31.3%	33.4% 1987	30.0% 1979
5	UST	27.7%	35.8% 1988	22.6% 1979
6	DELUXE	26.9%	30.3% 1987	24.3% 1980
7	TAMBRANDS	26.0%	29.8% 1984	23.2% 1980
8	MAYTAG	25.6%	36.8% 1987	18.2% 1980
9	MERCK	25.4%	42.8% 1987	18.5% 1983
10	JOSTENS	25.3%	50.5% 1988	19.1% 1985
11	DOW JONES	25.2%	27.5% 1979	19.7% 1988
12	ABBOTT LABORATORIES	25.0%	30.5% 1988	20.0% 1979
13	EG&G	24.7%	35.7% 1984	19.0% 1986
14	PHILIP MORRIS	23.7%	30.4% 1988	20.2% 1980
15	COCA-COLA	23.4%	31.2% 1988	18.4% 1982
16	WASHINGTON POST	23.3%	32.7% 1985	15.3% 1981
17	VF	22.3%	29.9% 1983	15.7% 1986
18	BRISTOL-MYERS	21.0%	23.4% 1988	19.3% 1979
19	NALCO CHEMICAL	20.6%	24.2% 1931	15.6% 1986
20	NOXELL	20.5%	21.9% 1984	19.8% 1980
21	ANHEUSER-BUSCH	20.2%	23.1% 1988	16.6% 1980

PHOTOGRAPHS BY DOUG MENUEZ

return on equity, a dazzling 40.3%, makes it first among the 21. This is a company that did not even exist until 1976 and in 1979 had only $48 million in sales. But that was fasten-your-seat-belts time, recalls the company's vice chairman, Arthur Ortenberg. About then, he says, the company's chairman—who is his wife, Elisabeth Claiborne—was coming to "the horrendous realization that she was now in the process of clothing all of America." The chairman knows a spousal overstatement when she hears one: "Not quite all, at that point," she demurs. Ortenberg, nonetheless, had the future stitched out: Customers, particularly working women, thronged to buy his wife's classically designed, well-made clothes. Last year Liz Claiborne—the company, led by the person—was No. 299 on the FORTUNE 500 with $1.2 billion in sales.

Then, as if to say "mission accomplished," the Ortenbergs announced in February that they would retire in June and think about climbing other mountains, real ones. The new chairman will be Jerome A. Chazen, 62, who knew the Ortenbergs before they started the company, joined it in 1977, and has been a lead player in its progress. A tough act to follow he's got. But the company, he says, has "a life of its own now." Besides, he adds wryly, challenge is a familiarity in the fashion world, where "you're only as good as your last line."

THAT BROMIDE also has meaning at an anti-exemplar, SmithKline Beckman, which has dropped out of the firmament. Ten years ago it was a seasoned, solid company, blessed with a wonder drug, the ulcer therapeutic, Tagamet. "A pharmaceutical gusher," to quote Chairman Henry Wendt, it pushed the company's returns to the sky. On FORTUNE's list of five years ago, SmithKline ranked fourth among the galaxy of 13.

But many outsiders had long wondered whether competition might develop for the drug. "How can you improve on Tagamet?" a SmithKline executive reassured a FORTUNE reporter in 1980, and for a time no one did. Then Glaxo Holdings, a British company, brought on Zantac, a stronger drug that began to perforate Tagamet's market.

KATHARINE GRAHAM
WASHINGTON POST

■ *Taking over tremulously in 1963 after her husband's suicide, Chairman Graham, 71, made the publisher a force in broadcasting and cable TV. Says Post investor Warren Buffett: "She never lets her ego get in the way of her judgment."*

Along the way, SmithKline overpaid for an acquisition, Beckman Instruments, and despite huge research spending failed to produce any important new drugs. Last summer, shocking Wall Street, SmithKline suddenly disclosed that profits would be down for the year. Months later, it announced it would lay off 1,600 employees and take a restructuring charge of $293 million. "This company is colossally screwed up," says a money manager who used to own the stock. "They *had* the ulcer market—they were there first. The point is that nothing lasts forever if you've got crummy management."

A second point is that SmithKline had a 1988 return on equity of only 14.8%, not enough to stay in the club. As a dropout from FORTUNE's high-return list, SmithKline has four others for company. The stunner is IBM, whose return on equity for the last three years has been under 15%. Asked in 1984 what he thought the probabilities were of IBM continuing to meet the list's statistical tests for another ten years, Frank T. Cary, then chairman of the executive committee, whipped back: "100%."

Two other dropoffs have slipped to averages around 19%, which still is excellent: Worthington Industries, a specialty steel company, and Dover Corp., a diversified metal-bender. The fifth among the fallen, Mitchell Energy, an independent oil and gas producer, sank precipitously to meager profits with the collapse in energy prices.

As the dropoffs prove, the stars do not enjoy lifetime tenure. All the more striking, then, is the enduring performance of eight survivors from 1984. In order of appearance on this year's list: Kellogg, American Home Products, Deluxe Corp. (until recently called Deluxe Check Printers), Maytag, Merck, Dow Jones, Coca-Cola, and Nalco Chemical. A hand, ladies and gentlemen: You are looking at a collection of financial wonders.

The eight hold title to some powerhouse brand names, but are notable mainly for their diversity. The newborn stars, as well, sprawl over the business landscape, though some come in twos, as if preparing to board an industrial Noah's ark. Besides Liz Claiborne in apparel, there's VF Corp., which got its initials from Vanity Fair lingerie but is known chiefly for its Lee and Wrangler blue jeans. Two arrivals are pharmaceutical companies that have steadily increased their returns: Abbott Laboratories and

REPORTER ASSOCIATE *William E. Sheeline*

ROBERT A. SCHOELLHORN
ABBOTT LABORATORIES

■ *CEO since 1979, Schoellhorn, 60, has spurred productivity, called for earnings gains averaging 15% a year, and made Abbott's diagnostic line the leader. A price war has cut infant-formula profits, but nutritional products for adults are a plum.*

Bristol-Myers. Two are tobacco types: Philip Morris and UST, whose Skoal and Copenhagen brands make it the king of smokeless. And two are publishers: Washington Post and Commerce Clearing House, whose tax reports keep lawyers and accountants up to speed.

Washington Post's chief executive, Katharine Graham, and Liz Claiborne are another kind of pair. Only three FORTUNE 500 companies are headed by women. One of them, Warnaco, whose chief is Linda Wachner, has lately been running losses. But Graham's and Claiborne's companies captured two spots out of 21. Statistically, companies led by women are entitled to only one-eighth of a spot. This writer, for one, does not find the over-representation of women surprising.

Four of the five remaining newcomers, Anheuser-Busch, Jostens, Noxell, and Tambrands, get their returns and their reputations mainly from the business they were built on. Anheuser-Busch claims 41% of the U.S. beer market, up from 33% five years ago, and is determined to get to 50%. Jostens plies the education market: It sells class rings, yearbooks, and photos to students, and computer systems to schools. Noxell's cosmetics and toiletries—Cover Girl, Clarion, Noxzema—fill the display racks of mass merchandisers.

Tambrands, which changed its name from Tampax, owns about 60% of the U.S tampon business. Tambrands also has an oddball distinction for a member of the 21: management trouble. After losing the confidence of his board, Tambrands Chief Executive Edwin Shutt Jr., 61, recently "retired," a departure that proves high returns don't necessarily guarantee the boss his job. Part of Shutt's problem was a diversification program that hasn't produced much.

THE 21st COMPANY, EG&G (its founders' initials), is so complex that Wall Street analysts pale at figuring it out. The company has 152 businesses, most technologically based and some with only $3 million or so in sales. Among EG&G's products are meters, valves, and X-ray equipment used at airport security checkpoints. But the company also manages many government facilities, among them the Kennedy Space Center. When the *Challenger* shuttle exploded in 1986, EG&G helped analyze debris, answer mail, and devise new safety procedures.

Remember the business that makes nearly 300% on assets? That's the manufacturing, research, and managerial work that EG&G does for the Department of Energy, at such nuclear facilities as the Nevada Test Site. Wouldn't you know that the return comes from government contracts?

The plot thickens if you scrutinize this enterprise. EG&G's 1988 annual report shows the Energy Department business earned an operating profit of $22 million last year on $8 million of assets. But, says EG&G's chairman, John M. Kucharski, 53, this operation does not have plant, equipment, inventories, or even a bank account: To pay its employees, it simply writes checks on a special government account. What the operation does have is a periodic fee that it charges the feds. So the assets here, says Kucharski, are simply the receivables that materialize briefly while EG&G is waiting to be paid. The reality, says Kucharski cheerfully, is "zero investment." But, he adds, "Bean counters do not deal well with infinity," which is why the segment data present the receivables as assets.

Infinity an investor can't match. But as long as he does not pay wildly for a high return, he can expect the company delivering it to give him long-term results that beat the stock market. As a whole, these 21 did not disappoint. Twenty of the group were publicly traded at the end of 1978, and their median total return to investors—stock appreciation plus dividends—over the following decade was an annual rate, compounded, of 21.6%. That's about four percentage points better than the 500 did as a whole, which over time makes a ton of difference.

The prize for best annual total return, 35.4%, goes to VF, which ten years ago was a relative unknown, just beginning to hit its stride. The worst return, though it is still not bad, was Nalco's 14.9%; its stock has just been hanging around since 1983, partly because the oil bust hurt sales of its specialty chemicals. Liz Claiborne, which went public only in 1981, has been the real knockout. Its stock price is up 14-fold since then, and the company has tossed in some small dividends. Annualized total return: 43%.

As the last decade began, an investor could not have known, of course, just which companies were going to produce star-quality returns on equity. But he could have looked at FORTUNE's first list of stars when it was published in April 1984, and decided to buy. Five of these companies, remember, have fallen from grace. None-

LAWRENCE R. PUGH AND ROBERT E. GREGORY JR.
VF CORP.

■ *Chairman Pugh, 56, and President Gregory, 46, have miraculously earned high returns on near-commodities: jeans, lingerie, athletic wear. VF zealously contains inventories. Buildups, says Pugh, are "the fastest way to get yourself in trouble."*

theless the median total return of the 13, annualized, has been 17.8%. In contrast, Standard & Poor's 500-stock index provided a total return over the period of only 11.4%, which is two tons of difference.

Kellogg and Merck led the parade with superstar returns: 40% and 35% annualized. Ten other companies had positive returns, ranging from Deluxe's 32% down to Dow Jones's 5%. Mitchell Energy, natch, brought up the rear with a minus 11%. So what? In investing, if enough stars shine, a few can flicker.

The management skills that make the high-return companies excel, in the market and every day, cannot readily be generalized. "If any specific way of approaching problems is common practice," says Claiborne's Art Ortenberg, "it is by definition incorrect." Well, says his wife, she does think there's something that matters to most businesses: "Keep your eye on the product. That was all-important to me."

The philosophies of both are visible in their decision not to own any manufacturing plants, but instead to contract work out. In earlier careers, each had seen the rigidities built into certain textile businesses, which cared more about keeping their mills going than they did about consumer preferences. Says Ortenberg: "When you see something like that, you realize that small and flexible is where it's at, and large and repetitive is sheer disaster." Nevertheless, Claiborne's executives—very much including the woman with her name on the door—have worked with their manufacturers, most of them in the Far East, just as closely as if they owned them. The goal, the boss says, has always been quality.

AT COMMERCE Clearing House, runner-up on the stars list, quality is called service. When Congress suddenly passed a new tax law last November, CCH exploded into action, working on Thanksgiving Day and straight through until Christmas to get the law's particulars into its 1988 tax reports. "We did it, and none of our competitors did," proudly says Richard Merrill, CCH's president, which no doubt helps explain why CCH is the runaway leader in this business.

Anheuser-Busch and Kellogg have much in common. Both are capital intensive, which most of the stars are not. Both dominate their markets and protect their brands with heavy advertising. And both are apostles of quality. Indeed, the brewer's chairman, August A. Busch III, 51, is so fervent about taste and "drinkability" that he brags about being the industry's high-cost producer. His business makes up for the money it lavishes on brewing, he says, by being super-efficient elsewhere—for example, in the manufacture of cans. Busch is also thinking of vertically integrating still further, into bottle manufacture, which is a business overrun today by leveraged-buyout companies, such as Owens-Illinois. Busch doesn't like the prices being asked for bottles. "Somebody has to pay the banker," says Busch, and he'd rather not be the one.

Busch says his unions are his "partners" in striving for quality, and Daniel J. Krumm, 62, chairman of Maytag, home of the Lonely Repairman, makes the same point: "Our unions have never resisted when we wanted to do something that would improve quality." But Maytag has had difficulties, he says, in trying to transplant its quality culture to stovemaker Magic Chef, acquired in 1986.

Cost control is another banner that many of the stars wave. The champ in this area when FORTUNE did its list five years ago was American Home Products, a widely diversified company that makes such products as Inderal, Advil, and Chef Boyardee spaghetti. Traditionally the executive lifestyle has been spartan. Miraculous to report, American Home has recently bought a plane—for convenience and security reasons, says Chairman John R. Stafford, 51. But let it not be thought that discipline has buckled. One Wall Street analyst recalls asking Stafford admiringly some time ago how he kept profits moving ahead so steadily. "Well," said Stafford, "if a manager goes over budget, I call him in for lunch." Pause. "No one gets invited to lunch twice."

American Home's insistence on ever-higher profits may help explain a financial disaster that has befallen that company and two other stars, Abbott Laboratories and Bristol-Myers. Those two dominate the infant-formula market, in which American Home is a distant No. 3. A government assistance program called WIC—for Women, Infants, and Children—is important to all these companies, accounting for about one-third of all cans of formula sold. Under the program, which is paid for by Washington but administered by the states, families at or near the poverty level are supplied vouchers to buy the product.

Over the years, the states tried repeatedly to egg the companies into a bidding war for the WIC business. No one cracked. Then, in 1986, Tennessee finally got American Home, which was hungry for market share, to bid for the state's entire business. The price American Home agreed to take was 81 cents a can, vs. the $1.29 then prevailing.

Two unsurprising things happened next: Oregon and other states leaped into this breach, all asking for bids, and Abbott and Bristol-Myers jumped to a defense of their market shares. By now, 41 states are exacting some kind of discount on the product. Lorraine Schwarz, a Salomon Brothers analyst, estimates that Abbott will average only 50 cents a can this year for its WIC sales. At that price, Abbott is selling below fully loaded cost and is engaged, says Robert Schoellhorn, the company's chairman, in a "charity business."

The three companies nevertheless continue to battle for sales—and cry over their spilled milk. Analyst Schwarz believes that Abbott, for example, will earn only about $260 million, pretax, on infant formula this year, against the $360 million that could have been made had American Home not begun discounting.

OPERATING MISTAKES of that magnitude are rare in star territory. But a raft of investment disappointments have made these prize performers acutely aware of their own limitations in running businesses other than those they grew up with. Jostens has been a better acquirer than most and remains on the hunt. It is even ready, when necessary, to pay the big prices that acquisitions command and that help create the disappointments. But, says Chairman H. William Lurton, 59, with feeling: "You really don't know a business until you have to manage it."

Jostens, for example, thinking that its knowledge of the education market could be extended broadly, bought some post-secondary schools that teach business skills. "But," says Lurton, "they were so different from what we knew. This was a service business that required intensive management, and there were a lot of legal requirements, and we couldn't figure out how to keep close track of what the schools were doing. One thing about us: If we feel uncomfortable for any reason, we'll swallow our pride and divest," which is what Jostens did.

The differences between core businesses and add-ons are dramatically displayed at Philip Morris and UST. For both, tobacco is marvelously lucrative, partly because the retail buyer craves the product and tolerates

This unique lineup shows what our 21 stars earned last year, pretax, on their "identifiable assets" in various businesses. Seven companies present their entire business as one segment, and a few figures don't tell all. Commerce Clearing House's publishing business is more gemlike than it looks because its tax report subscribers supply interest-free capital by paying in advance. Ditto Washington Post's Newsweek. *But with national advertising weak, it took a restructuring charge for employee early retirements and an office move.*

WHERE THE BEST BUSINESSES MAKE THE MOST—AND LEAST

	COMPANY	SEGMENT	OPERATING INCOME 1988 $ millions	RETURN ON ASSETS 1988 %
1	EG&G	Dept. of Energy contracts	22	272.3
2	UST	Tobacco	278	95.2
3	BRISTOL-MYERS	Nonprescription health prods.	471	74.3
4	MAYTAG	Soft-drink vending equipment	53	71.4
5	PHILIP MORRIS	Tobacco	3,846	64.1
6	DELUXE	Checks and payment systems	266	63.9
7	COCA-COLA	Soft drinks, international	1,339	63.8
8	WASHINGTON POST	Newspapers	141	52.7
9	MERCK	Human and animal drugs	1,806	49.9
10	ABBOTT LABORATORIES	Drugs and nutritional products	773	47.5
11	BRISTOL-MYERS	Toiletries and beauty aids	223	42.6
12	BRISTOL-MYERS	Household products	81	42.2
13	WASHINGTON POST	Broadcasting	64	40.5
14	EG&G	Technical services	28	40.2
15	AMER. HOME PRODUCTS	Food and household products	202	36.8
16	BRISTOL-MYERS	Drugs and medical products	565	31.2
17	AMER. HOME PRODUCTS	Drugs and health care prods.	1,114	30.6
18	NALCO CHEMICAL	All products	181	30.3
19	TAMBRANDS	All products	136	30.2
20	LIZ CLAIBORNE	All products	182	29.0
21	EG&G	Defense products and services	19	26.2
22	KELLOGG	All products	775	24.9
23	NOXELL	All products	82	24.9
24	DOW JONES	Business publications	113	24.0
25	MAYTAG	Home appliances	183	23.3
26	EG&G	Aerospace	14	23.0
27	ANHEUSER-BUSCH	Beer	1,168	22.9
28	DOW JONES	Community newspapers	43	22.7
29	DELUXE	Computer and business forms	10	21.9
30	COMMERCE CLEARING HSE.	Corporate services	13	20.9
31	COCA-COLA	Soft drinks, U.S.	352	20.6
32	JOSTENS	All products	76	19.1
33	EG&G	Instruments	16	19.1
34	WASHINGTON POST	*Newsweek* magazine	20*	18.8
35	VF	All products	330	18.7
36	EG&G	Industrial components	23	18.2
37	WASHINGTON POST	Test prep. servs. and other	9	18.0
38	DOW JONES	Financial information services	212	17.8
39	ABBOTT LABORATORIES	Hospital and laboratory prods.	363	17.7
40	MERCK	Specialty chemicals	62	14.4
41	COMMERCE CLEARING HSE.	Publishing	42	14.0
42	COMMERCE CLEARING HSE.	Tax return processing	15	13.7
43	COCA-COLA	Food	89	12.9
44	ANHEUSER-BUSCH	Entertainment and other	41	12.0
45	PHILIP MORRIS	Beer	190	11.7
46	DELUXE	Greeting cards and other	13	6.1
47	WASHINGTON POST	Cable television	20	5.3
48	PHILIP MORRIS	Financial servs. and real estate	162	5.1
49	ANHEUSER-BUSCH	Food	55	4.5
50	PHILIP MORRIS	Food	392	1.6
51	UST	Wine	1	1.1
52	UST	Pipes and cleaners	(2)	–

*Earnings before a restructuring charge of $21 million.

price increases that other consumers might not. Would-be entrants into this industry are also virtually barred because tobacco products cannot be advertised on television. That prohibition, which fell on UST only in 1986, has nicely cut marketing costs, says UST's president, Nicholas A. Buoniconti, 48, the former Miami Dolphins linebacker. But, he says, thinking of smokeless tobacco lawsuits, "All we've done is transfer the advertising budget to legal and corporate affairs." Sitting by, UST's communications vice president winces, no doubt wishing his boss had chosen in this instance not to communicate.

Legal costs notwithstanding, UST's tobacco business earned 95%, pretax, on assets last year, a feat placing it second only to EG&G's nuclear wonder. A touch further down FORTUNE's segment list is Philip Morris's huge tobacco operation, with a return of 64% and so many dollars in profits—$3.8 billion—that it has some claim to being, in a financial if not a health sense, the best business in the country. Philip Morris, furthermore, has expertly clawed its way up in this business, raising its U.S. market share in the last decade alone from 29% to 39%.

But do these tobacco facts make Philip Morris and UST any good at running other kinds of business? Look at the bottom of the list. There you will see two UST operations: wine, on which it earned only 1%, and some miscellany—mainly smoking pipes and cleaners—that lost money.

PHILIP MORRIS'S beer and food businesses are cellar dwellers also, of a monster kind. Included in the food segment are both General Foods and Kraft, in which Philip Morris has no less than $25 billion invested. Operating profits in 1988 were clobbered by a $348 million General Foods restructuring charge and include only a few weeks of Kraft's 1988 earnings. But even if both companies had contributed a full plate of profits, Philip Morris would have earned no better than 6%, pretax, on food. Treasury bills, at 6.4%, would have provided an edge.

Anheuser-Busch might chortle at Philip Morris's experience with beer, in which it is a no-foam No. 2 with about 21% of the market, were it not for Busch's dismal encounter with food. It made less than 5% on that business in 1988, and that was a relatively good year for baker Campbell Taggart, Busch's main food operation. Jerry Ritter, Busch's chief financial officer, says the company overestimated its ability to transfer its skills to a different field. Says his boss: "We sure learned this business the hard way."

A few stars besides Jostens continue to look for acquisitions. But many have simply resorted to repurchasing their own stock, which amounts to buying into a business they know intimately and love. In the last few years Merck has spent $1.9 billion buying in 13% of its stock, and recently announced it might put as much as $1 billion more into the program. Other companies, such as Kellogg and Abbott, have even taken on debt to make repurchases.

Stardom does not confer protection from takeover. At times rumors have rumbled around Tambrands, Maytag, Jostens, and VF, among others.

Roberto C. Goizueta, 57, chairman of Coca-Cola, is a true convert. A few years ago he was busy acquiring bottling companies and Columbia Pictures and telling the world how much sense that made. He has since reduced Coke's stake in these to under 50%, guzzled $2.3 billion of his own stock, and shown a thirst for more. Compared with Coke, Goizueta says, the bottlers and Columbia have lower returns and less-consistent cash flow. Buying Coke stock, he says, is simply "a wiser use of capital." His conclusion agrees with a FORTUNE study (April 29, 1985), which showed that the typical company making significant repurchases because it thought its stock cheap had sharply outperformed the market.

Stardom, alas, does not necessarily confer protection from hostile takeovers, and indeed may invite them. Five of the 21 look safe: Dow Jones, Washington Post, and Noxell are insulated by two classes of common stock, and Kellogg and Commerce Clearing House have large shareholders in their camp. Kellogg's is the Kellogg Foundation, whose stake is 34%, and CCH's is the Thorne family, at 56%. Another few members of the galaxy might seem untempting targets: EG&G, for example, because of its technology and its ties to the government.

But takeover rumors have from time to time rumbled around Tambrands, Maytag, Jostens, and VF, among others. Today, VF's chairman, Lawrence Pugh, views his moderately leveraged capital structure uneasily. "Having a great balance sheet," Pugh says, "raises a red flag." Pugh, who acquired rival jeansmaker Blue Bell in 1986 and calls that deal "phenomenal," would happily borrow to buy another apparel company. But prices, he says, are so horrendous as to jeopardize returns: "And we are not going to leverage ourselves for the sole purpose of not being taken over."

THE PROSPECT of a takeover may enhance VF in the eyes of investors. But then, the jeans market lacks the vitality it had a few years ago and VF's profits have been under some pressure. So there are questions as to what the company's return on equity will be in the future—as there are also questions hanging over certain other stars. Maytag, for example, has recently paid a bundle to acquire Chicago Pacific and its appliance operation, Hoover. At least for now, Maytag cannot earn on its new investment the returns it has been earning on itself.

At Commerce Clearing House and Deluxe, the uncertainties concern the technology wave, which is slowly rolling in on both businesses. CCH expects soon to be offering electronic versions of its tax reports, and Deluxe, though still printing billions of checks, has acquired companies that process electronic transfers of funds. Dow Jones's experience ought to reassure these companies. The company's flagship *Wall Street Journal* suffered a post-crash hangover last year, earning far less than usual. But profits of the company's information retrieval services rose nicely, vindicating the longstanding belief of Chairman Warren H. Phillips, 62, in the technology revolution.

Tambrands has obviously got management problems to worry about, and millions of eyes will be watching as Claiborne's Chazen moves his act onto the fashion runway. EG&G is even rethinking those 152 businesses. Once almost totally autonomous, many are now getting a dose of centralization. Yes, says Chairman Kucharski, this reorganizing is a wrench for managers, but it is essential if EG&G is to run efficiently.

So changes are in the works and risks abound. But the same could have been said five years ago, when FORTUNE was looking at its first batch of stars. Kellogg was then losing market share, and Merck was going through a dry spell in R&D. Both companies subsequently boomed—and so did their stocks. The point, it seems, is that stars have a way of blazing all over again.

CEOs GIRD FOR GLOBAL BATTLE

Never mind trade barriers and taxes. In the latest FORTUNE 500/CNN Moneyline CEO Poll, big business chiefs say they'll conquer with quality and productivity. ■ *by Brian Dumaine*

WHO'S TO BLAME for America's past setbacks in world business competition? The nation's top CEOs say nobody but themselves. Mostly refusing to point fingers at external forces like trade regulations and tax laws, they believe their best bet for improving global competitiveness is improving quality and productivity in their own corporations. While many American industries have already made impressive strides against foreign rivals (see "The U.S. Gets Back in Fighting Shape"), executives think further advances won't happen fast. CEOs overwhelmingly do not expect the trade deficit to decline significantly over the next 12 months.

"Strong foreign competition incites us all to higher performance."

STANLEY GAULT
Rubbermaid

ANDY FREEBERG

These are among the principal results of the latest FORTUNE 500/CNN Moneyline CEO Poll. Clark Martire & Bartolomeo, an independent opinion research firm, conducted the survey from March 15 to 23. Respondents were 200 CEOs of FORTUNE Industrial 500 and Service 500 companies.

The CEOs' comments showed how extensively the quality gospel has taken hold in U.S. business. When asked what steps U.S. industry should take to improve its world competitiveness, 30% said improving product quality was most important, and others gave it runner-up status. William Ruckelshaus, CEO of Browning-Ferris, sees quality as vital: "It has slipped in the past, and that has been responsible for some of the decline in world trade. The quality of our products and services must be the highest in the world." Westinghouse CEO John Marous believes quality must pervade the corporation. "We need to adopt a total quality culture," he says. "We're not looking for a 10% to 20% improvement. We need a quantum jump."

REPORTER ASSOCIATE *Carrie Gottlieb*

Despite impressive recent gains in U.S. productivity, 29% of chiefs said improving it further should get first priority. How to do that? Mainly by focusing on cost cutting, automation, and that old standby, participative management. Says Owens-Corning Fiberglas CEO William Boeschenstein: "We need better teamwork, better direction, and better communication."

Some manufacturing executives object to what they consider a highly unproductive U.S. service sector, including the legal and finance firms they have to deal with daily. Says David Roderick of USX: "A problem is the services we are required to purchase. The service sector is insensitive to getting its costs down." Pfizer chief Edmund Pratt has a tempting, if impractical, solution to part of the problem. "Between lawyers defending us from takeover bids and lawyers defending us against myriad suits, I think we'd better send two-thirds of our lawyers to Japan—though they couldn't use them," he says. "None of these things exist there, and that gives the Japanese a competitive edge."

Some CEOs do call for help from Washington. Says John Walter of R.R. Donnelley & Sons: "Competition and foreign trade are all healthy and good, but tax laws and incentives should be equally fair to all." Others cite America's tendency to spend rather than save—and blame it on government policy. Says Vista Chemical's John Burns: "We must change tax laws to increase savings to produce capital investment."

John Woodhouse, CEO of Sysco Corp., advocates letting corporations pool resources on important research projects. "The cost of scientific development, especially in biochemistry and physics, is so horribly high that no one American company is likely to take the risk," he says. While many foreign countries allow corporations to form scientific consortiums that spread

Q **Has foreign ownership of U.S. companies gone too far?**

A

Yes	**13%**
No	**86%**
Not sure	**1%**

Q **Is America better off, worse off, or mainly unaffected if it buys increasing amounts of basic industrial products from low-cost overseas manufacturers?**

A

Better off	**42%**
Worse off	**35%**
Unaffected	**19%**
Not sure	**4%**

Q **Assuming U.S. trade policy remains unchanged, do you expect the trade deficit to decline significantly in the next 12 months?**

A

Yes	**24%**
No	**75%**
Not sure	**1%**

"America's cultural diversity is a major advantage in the long run."

RAND ARASKOG
ITT

ANDY FREEBERG

"We're fooling ourselves if we think a lower dollar is the answer to the trade deficit."

W. RUCKELSHAUS
Browning-Ferris

KATHERINE LAMBERT

the cost of making new products, American antitrust laws can deny U.S. companies that opportunity.

Not many CEOs consider the crisis in American education the most urgent competitive issue, but all agree much needs to be done. Says Westinghouse's John Marous: "It won't be long before more than 30% of our population will be illiterate, and certainly that cannot allow us to be competitive worldwide."

A popular explanation of Japan's economic success holds that the country's monolithic culture gives it a unity of purpose that culturally diverse America can never match. Most CEOs don't buy it. Martin Walker, CEO of chemical maker M.A. Hanna, emphatically states, "There's no natural reason we can't produce as well as the Japanese. Mostly it's an unwillingness to apply the right technology and to get our workers involved in the process." Some, like ITT CEO Rand Araskog, believe the makeup of the American work force is a plus: "It's a help in terms of new ideas and flexibility. The cultural diversity of America is a major advantage in the long run."

Nor is there much sense of alarm among the CEOs about foreign takeovers of U.S. companies, with nearly nine out of ten saying foreign ownership has *not* gone too far. Rubbermaid CEO Stanley Gault explains, "As long as we're free to buy into their countries, they should be allowed to buy into ours. I think good strong foreign competition incites us all to higher performance." For the most part, executives tend to see foreign investment as an expression of faith in the U.S. economy.

Another often heard worry arises from low-cost manufacturers around the world taking over markets for basic industrial products. The trend doesn't bother most of the CEOs. Some 42% of those polled believe that American industry is *better off* using more low-cost foreign suppliers, and another 19% say it basically doesn't matter whether the source is onshore or off. As Ruckelshaus argues, "I think our manufacturing companies should use suppliers that produce the best goods at the lowest prices, whether foreign or U.S. If we can't do that, we can't compete."

DESPITE their basic optimism and America's improving competitiveness, few of the top CEOs expect the U.S. trade situation to improve anytime soon. Three out of four think the trade deficit will not decline significantly in the next year. Their opinion runs contrary to the Blue Chip Economic Indicators, a survey of 51 top forecasters, which predicts a hefty 21% year-to-year decline in the trade deficit in the final quarter of 1989.

Q **Is the diverse nature of U.S. society a help, a hindrance, or not much of a factor in competing against the more monolithic Japanese society?**

A

Help	**33%**
Hindrance	**38%**
Not a factor	**26%**
Not sure	**3%**

The executives cite several reasons for their low expectations. America's top exporters—commercial aerospace and chemical companies among them—are already running close to capacity. They won't be able to increase production enough this year to meet growing international demand. Believing the dollar to be fairly valued, the CEOs don't think a further devaluation would help boost exports. Says Ruckelshaus: "We're fooling ourselves if we think a lower dollar is the answer to the trade deficit."

Q **What are the most important steps U.S. industry can take to improve its world competitiveness?**

A

Improve quality	**30%**
Improve productivity	**29%**
Increase R&D, modernize plants	**21%**

Other responses include: Lower costs, improve training, reduce regulation

Beyond those considerations, Rohr Industries CEO Harry Todd points out that the trade deficit isn't likely to shrink dramatically until American companies begin to think more globally. Says he: "We make too many excuses rather than tailor our products to serve foreign markets." Critics of American industry say one reason the Japanese don't buy U.S. cars is that most models are too wide for the streets and the steering wheels are on the left side instead of the customary right. Warns 3M CEO Allen Jacobson: "Don't think you can retail everywhere in the world, especially with products that have been developed for the U.S. market."

"It won't be long before more than 30% of our population will be illiterate."

JOHN MAROUS
Westinghouse

KEN KERBS

Despite America's progress toward world competitiveness in recent years, the battle is not won—and never will be. William Esrey, CEO of United Telecommunications, speaks for many of the CEOs polled when he says, "We always want more for less. But there are others who are hungrier and willing to work better for their rewards—and consequently they produce better for less." A lesson to keep close to heart as the 21st century dawns. ■

GROWING FAST ON THE 500's FRINGE

These rising companies are good bets to leave the farm team for the major leagues. From across the U.S., they have little in common but a penchant for superexpansion. ■ *by Peter Nulty*

THE FORTUNE 500 is a uniquely dynamic roster. Membership and rankings are good for only one year. Popularity among one's peers counts for nothing. There is no blackball, no ruling clique, no tenure. This makes membership both democratic and glorious—and as hard to hang on to as a greased pig.

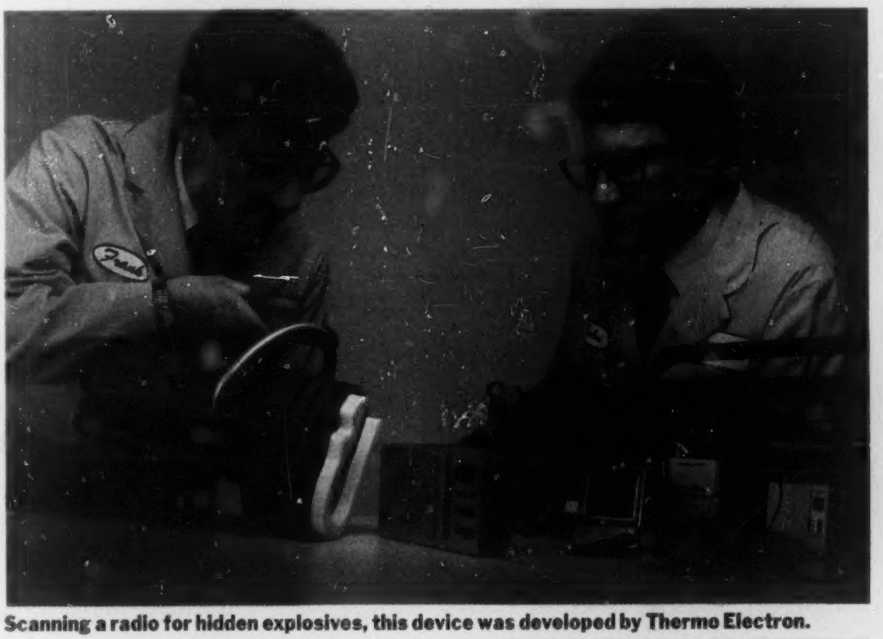
Such perils only whet the appetites and quicken the blood of the FORTUNE 500 farm team—those fast-growing midsize companies that see membership within their sights. Can they make it in another year, or will it take two? The way these guys view the 500, every company that goes hurtling into the abyss represents an opportunity to move up.

Witness, for instance, the fate of Allis-Chalmers. After divesting three divisions in a Chapter 11 restructuring last year, Allis skidded all the way from No. 394 on the list to No. 573 *off* the list in one year, a fall of 179 places. Envirodyne Industries lost its place near the bottom of last year's list even though it increased sales 3% in 1988. The company was left in the dust when the cutoff for the list leaped from $450 million to $500 million, a gain of 11%.

Seven members of last year's farm team have clawed their way onto this year's FORTUNE 500, paced by Valmont Industries, a manufacturer of steel poles and tubing that advanced from third place on the farm team to No. 415 in this year's directory.

The 25 members of this year's farm team are a diverse bunch. Some were born in the last century, others are offspring of the 1980s. Some are growing by acquisition, others by internal investment. Some manufacture recognizable products such as traffic lights, personal computers, or underwear. Others prefer the mysteries of paper machine clothing or composite honeycombs.

One common feature that distinguishes this team, however, is speed. The group is growing significantly faster than last year's, reflecting the rejuvenation of smokestack America. Median growth for the 1989 team, compounded over the past three years, is 23%. Last year the median was 14%. The slowest member on the list, Albany International (15% growth), is expanding at twice the speed of last year's slowest.


TOBEY SANFORD

Scanning a radio for hidden explosives, this device was developed by Thermo Electron.

FLEETEST OF ALL is Mark IV Industries, a conglomerate based near Buffalo, New York, that has been expanding by more than 100% a year through acquisitions. The strategy at Mark IV is to manufacture specialized industrial products in market niches so narrow that few competitors are vying for the field. The company now has over 30 divisions making everything from traffic lights to fan belts to garden hoses.

Mark IV may stand the best chance of joining the FORTUNE 500 next year. Last October the company acquired Armtek, which had $1.2 billion in sales in a fiscal year that ended on September 30. Since Armtek had finished its 1988 fiscal year one day before the acquisition was completed, Armtek appears on this year's list as an independent company, No. 301. The combined sales of the two companies, after some divestitures, will be around $1.3 billion. This should catapult Mark IV into the middle of the 500 a year from now, assuming of course that something monumental, such as a takeover, doesn't occur between now and then.

If the FORTUNE 500 were the FORTUNE 501, Thermo Electron would already be a member of the club. Thermo Electron was founded by George Hatsopoulos, a former professor of thermodynamics at Massachusetts Institute of Technology and current

---

REPORTER ASSOCIATE *J. B. Blank*

chairman of the Federal Reserve Bank of Boston (see Investing). Hatsopoulos's strategy for growth is straightforward, if not easy to execute: Read the newspapers to identify society's long-term problems and then engineer devices that help solve those problems. The company's product list looks like a first-aid catalogue for modern industrial ills. Thermo Electron makes such items as co-generators, hazardous waste incinerators, radiation detectors, and air pollutant detectors. Right now the company is putting the finishing touches on an explosives detector the airlines might find useful.

HATSOPOULOS'S plan is working well. The company grew 31% last year, although Hatsopoulos warns that the most recent spurt may not be sustainable at quite that level. In the early 1980s he saw a number of potentially lucrative problems developing and "drove earnings to zero," as he says, in order to develop new products (such as the explosives detector) that are now coming on line. Thermo Electron's R&D costs last year equaled an impressive 8.5% of sales. It is a testament to the company's record and prospects that a share of Thermo Electron stock costs roughly $20, or 16 times earnings.

Thermo Electron's strategy for growth: Identify society's long-term problems and engineer solutions.

Delta Woodside Industries is an aggressive upstart in an old-timer's industry. The textile company was founded in Greenville, South Carolina, in 1984 by a former executive of Riegel Textile, Erwin Maddrey, 48, and a lawyer, Bettis Rainsford, 38. "We're mavericks," says Maddrey. "We think textiles is a good business. People are gonna wear clothes." Delta focuses mainly on producing textile material rather than finished clothing because the cost of labor, America's disadvantage, is greater in finished products. The clothing the company does make is of the commodity variety, such as underwear and Duckhead-brand khaki trousers popular in the Southeast.

Maddrey and Rainsford have built Delta by acquiring factories from other textile makers when the cyclical business is at its lowest. "When they think there's no tomorrow, we can buy for much less than book value," says Maddrey. Delta bought no factories in 1988 because the textiles industry is in an upswing and prices are high. Sales still advanced from $417 million to $488 million, a nifty 17% over 1987.

AST Research was founded in 1982 by three immigrant computer engineers who figured they might capitalize on the deficiencies of IBM's PC. Albert Wong and

FAST-GROWING COMPANIES REACHING FOR THE 500

COMPANY	PRINCIPAL PRODUCTS	1988 SALES $ Thousands	1988 NET INCOME $ Thousands	1985-88 AVERAGE ANNUAL SALES GROWTH
THERMO ELECTRON (Waltham, Mass.)	Environmental instruments	$500,604	$20,148	23.5%
NEWMONT MINING (Denver)	Gold, coal	$500,092	$174,851	26.1%
WHITTAKER (Los Angeles)	Chemicals, electronics	$499,104	$23,055	17.4%
NORTHWESTERN STEEL & WIRE (Sterling, Ill.)	Metals	$496,848	$29,125	24.0%
HELENE CURTIS INDUSTRIES (Chicago)	Cosmetics	$488,932	$10,832	20.2%
DELTA WOODSIDE INDUSTRIES (Greenville, S.C.)	Textiles, apparel	$488,568	$41,452	73.0%
ENVIRODYNE INDUSTRIES (Chicago)	Food packaging	$488,366	$48,237	112.9%
LA-Z-BOY CHAIR (Monroe, Mich.)	Furniture	$486,793	$26,481	19.9%
FLORIDA STEEL (Tampa)	Steel	$476,243	$19,699	18.3%
HARMAN INTERNATIONAL (Washington)	Electronics	$468,184	$12,018	38.1%
QUANEX (Houston)	Steel	$462,916	$18,473	16.0%
ALBANY INTERNATIONAL (Albany, N.Y.)	Textiles	$461,246	$36,258	15.2%
WYSE TECHNOLOGY (San Jose, Calif.)	Computers	$456,571	$27,978	56.2%
LOCTITE (Hartford)	Chemicals	$416,880	$41,900	21.7%
PRECISION CASTPARTS (Portland, Ore.)	Aerospace castings	$414,441	$36,777	41.6%
AST RESEARCH (Irvine, Calif.)	Computers	$412,721	$15,071	43.9%
ACME STEEL (Riverdale, Ill.)	Steel	$412,453	$30,982	19.8%
FLORIDA ROCK INDUSTRIES (Jacksonville, Fla.)	Building materials	$409,134	$29,329	18.3%
AVX (Great Neck, N.Y.)	Electronics	$408,939	$27,563	31.8%
MARK IV INDUSTRIES (Williamsville, N.Y.)	Electronics	$402,992	$17,041	118.6%
HEXCEL (San Francisco)	Industrial honeycomb	$399,180	$16,135	19.3%
CLEVELAND-CLIFFS (Cleveland)	Iron ore	$393,300	$44,700	18.3%
PLY-GEM INDUSTRIES (New York City)	Building materials	$383,699	$15,850	32.1%
LADD FURNITURE (High Point, N.C.)	Furniture	$379,904	$24,605	15.4%
CLABIR (Greenwich, Conn.)	Food, electronics	$340,920	($162,279)	113.2%

JAY BROUSSEAU

A worker at Hexcel Corp. inspects fiberglass honeycomb for aircraft engine casings.

Tom Yuen from Hong Kong and Safi Qureshey from Pakistan started out making an add-on board called the Six Pack Plus to give IBM's PC more power and memory. The Six Pack was no small beer, carrying AST to over $100 million in annual revenues within three years.

In 1986 the trio, who are now American citizens and all thirtysomething, began building IBM clone computers. They produce eight models, which they market mainly to corporate customers. Annual sales growth in the past three years has been nice to compute: 44%. In the time-honored way of computer whiz kids, Wong resigned recently to think and enjoy life. His 17% of the stock is worth about $15 million. Oh yes, AST stands for Albert, Safi, and Tom.

Hexcel Corp. of San Francisco is reigning queen of the honeycomb industry (industrial honeycomb, that is) with about 65% of the market. Honeycomb is a strong, lightweight structural material made up of hexagonal cells usually formed into panels. A crude variety of metal honeycomb was used in radar domes during World War II. The company, whose name is short for hexagonal cell, was founded in 1948 to exploit the first machines that could mass-produce the stuff. The company's earliest product was used in B-36 bombers.

Honeycomb has since become a staple of the aerospace industry as filler in the floors, wings, doors, and cabin partitions of aircraft. The company's recent growth rate of 19% a year may slow somewhat as military spending tapers off, but commercial aviation is beginning a new capital-spending cycle to replace aging fleets. Boeing is a particularly large customer, accounting for 20% of Hexcel's sales, and its newly popular 767 aircraft is the largest user of honeycomb ever. Hexcel's engineers are researching new uses for honeycomb, for example in autos and mass transit vehicles. The company has also branched into manufacturing graphite composite materials used in aircraft as well as sports equipment like tennis rackets. Busy as bees, they are.

Riding high in IBM's wake are AST clonemakers Yuen and Qureshey.

DAVID STRICK—ONYX

ALBANY INTERNATIONAL is a renascent offspring of the great downsizing and LBO craze of the 1980s. The company began in 1895, producing the felt material known as paper machine clothing that paper pulp rests on as it rolls through the paper mill. Later Albany wandered into such businesses as tennis ball covers and plastic tubes. In 1983 a management group led by J. Spencer Standish acquired the company in a leveraged buyout, stripped it down to the paper machine clothing business, then took it public again in 1987.

Today the material on which paper rolls through the mills is made from synthetic cloth rather than felt, and Albany International is the world's largest producer, with about 20% of the market. Demand for paper machine clothing is directly related to the volume of paper production since the cloth wears out about every 30 days. With U.S. paper manufacturing growing about 3% a year, Albany's future might seem limited, so the company has been stealing market share from competitors by aggressively researching new products. One fabric, for example, cuts the downtime necessary for changing a paper machine's clothes from eight hours to one. The company's research and development budget was about 3% of sales last year, unusually high for a firm in that industry.

The urge to diversify springs eternal. In the course of their research, Albany International's chemical engineers came up with a synthetic goose down that will soon be marketed under the name Primaloft. "Some of us wanted to call it Goosetex, but we were voted down," says Charles Buchanan, the company's corporate secretary and vice president. Buchanan thinks that with expanding market share and new products, Albany International could continue to increase sales and earnings about 15% a year. F

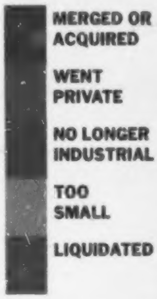
A NEW ERA OF RAPID RISE AND RUIN

Modern business has never seen anything like it: In just five years well over 100 companies have been replaced on the FORTUNE 500. Here's where they went. ■ *by John Paul Newport Jr.*

UNLIKE OTHER progeny of the 1950s, the 35th FORTUNE 500 has not succumbed to yuppielike predictability. On the contrary, our annual list has never displayed more surprise and volatility than in the period just past. Of the 500 corporations included in the rankings five years ago, 143—or nearly 30%—are missing from this year's tally. By comparison, during the 500's entire first quarter-century (1955-80), only 238 companies dropped out.

Of course, not many of these displaced companies have actually vanished. Of the 1983 group, only Uniroyal, Household Manufacturing, and American Bakeries have been formally liquidated as corporate entities. The rest, in one guise or another, are still doing business. Twenty-three companies, including relative biggies like Allis-Chalmers and Lone Star Industries, shrank or didn't grow fast enough to retain their status among the elite 500. Sixteen others, including AT&T and Gulf & Western, altered the nature of their businesses sufficiently to make them ineligible for the list. (Companies must derive more than 50% of their sales from manufacturing or mining to qualify. Otherwise, they are eligible for one of FORTUNE's Service 500 lists.)

WHERE THEY WENT



But by far the biggest reason for the hectic shuffling among America's mightiest industrial companies is the decade's epidemic of dealmaking. More than 100 of 1983's FORTUNE 500 have since been acquired, merged, or taken private. Most of those—67 companies in all—now churn out steel or pump oil as part of other companies on the 500. The size of

REPORTER ASSOCIATE *Darienne L. Dennis*

THE PAST FIVE YEARS' DEPARTURES FROM THE FORTUNE 500

1983 RANK		LAST APPEARANCE	
11	GULF OIL	1983	Acquired by Chevron (1988 rank: 11)
20	ITT	1987	Reclassified as Diversified Service
24	GETTY OIL	1983	Acquired by Texaco (rank: 8)
25	STANDARD OIL (OHIO)	1987	Acquired by British Petroleum; renamed BP America
26	AT&T TECHNOLOGIES	1983	Became part of AT&T listing
33	DART & KRAFT	1987	Renamed Kraft (1986); acquired by Philip Morris (rank: 10)
40	UNION PACIFIC	1983	Reclassified as Diversified Service
41	GENERAL FOODS	1985	Acquired by Philip Morris (rank: 10)
54	SIGNAL COS.	1984	Acquired by Allied; renamed Allied-Signal (rank: 29)
56	NABISCO BRANDS	1984	Acquired by R.J. Reynolds; renamed RJR Nabisco (rank: 20)
61	CHARTER	1983	Reclassified as Diversified Service
66	SPERRY	1985	Merged with Burroughs to form Unisys Corp.(rank: 38)
67	GULF & WESTERN INDUSTRIES	1984	Reclassified as Diversified Service
68	CONTINENTAL GROUP	1983	Acquired by Peter Kiewit Sons'
88	ESMARK	1983	Acquired by Beatrice (rank: 57)
95	FIRESTONE TIRE & RUBBER	1987	Acquired by Bridgestone (Japan)
105	AMERICAN MOTORS	1986	Acquired by Chrysler (rank: 7)
116	CARNATION	1983	Acquired by Nestle (Switzerland)
117	AMERICAN CAN	1985	Reclassified as Diversified Financial; renamed Primerica
122	CELANESE	1986	With American Hoechst formed Hoechst Celanese (rank: 78)
132	NATIONAL INTERGROUP	1984	Reclassified as Diversified Service
136	NORTON SIMON	1983	Acquired by Esmark; now part of Beatrice (rank: 57)
140	KAISER ALUMINUM & CHEMICAL	1987	Renamed Kaisertech; acquired by Maxxam (rank: 485)
141	ST. REGIS	1983	Acquired by Champion International (rank: 91)
143	LEVI STRAUSS	1985	LBO by management
144	CROWN ZELLERBACH	1985	Acquired by James River Corp. of Virginia (rank: 92)
145	REPUBLIC STEEL	1983	Acquired by LTV (rank: 56)
155	SINGER	1987	LBO; spun off manufacturing units to SSMC (rank: 414)
161	KIDDE	1986	Acquired by Hanson Industries NA (rank: 67)
172	WILLIAMS COS.	1983	Reclassified as Utility
175	MCGRAW-EDISON	1984	Acquired by Cooper Industries (rank: 107)
178	WHITE CONSOLIDATED INDUS.	1985	Acquired by Electrolux (Sweden)
179	AVCO	1984	Acquired by Textron (rank: 61)
180	UNIROYAL	1985	LBO led by Clayton & Dubilier; liquidated
186	J.P. STEVENS	1987	Acquired by West Point-Pepperell (rank: 195)

continued

these intramural deals has ranged from Chevron's $13 billion acquisition of Gulf (No. 11 in 1983) to USG's $380 million takeover of Masonite (No. 499).

The period under consideration coincides almost exactly with the run-up in merger and acquisition activity. According to W.T. Grimm, a Merrill Lynch subsidiary in Schaumburg, Illinois, the value of M&A deals announced in the U.S. from 1984 through 1988 totaled $886 billion. That is almost three times the value of deals done in the previous five years. The number of transactions greater than $1 billion, those most likely to involve FORTUNE 500 companies, exploded from 36 in the earlier period to 162 in the past five years.

The number of transactions greater than $1 billion, those likely to involve 500 companies, exploded from 36 to 162 in the past five years.

The long economic expansion that began after the 1982 recession gave many chief executives the confidence and cash flow they needed to risk making outsize acquisitions. The advent of Michael Milken and his junk bond juggernaut helped. No matter what history ultimately decides about the Drexel Burnham Lambert wizard, just indicted on racketeering and insider-trading charges, few can deny his genius in establishing high-yield debt as the preferred means for funneling big bucks to big deals overnight.

WHERE THEY WENT

- MERGED OR ACQUIRED
- WENT PRIVATE
- NO LONGER INDUSTRIAL
- TOO SMALL
- LIQUIDATED

Bulging war chests and a benign economy would not have spurred so manic an M&A craze if the Reagan Administration's antitrust policy had not been so relaxed. In industry after industry—food, energy, communications, transportation—executives began to fear that only a handful of the biggest companies would survive. It was eat or be eaten. An alternative response to the pressure

1983 RANK		LAST APPEARANCE	
187	**OGDEN**	1985	Reclassified as Diversified Service
188	**STERLING DRUG**	1987	Acquired by Eastman Kodak (rank: 18)
193	**SCM**	1985	Acquired by Hanson Industries NA (rank: 67)
196	**SUPERIOR OIL**	1983	Acquired by Mobil (rank: 6)
198	**GOULD**	1987	Acquired by Nippon Mining (Japan)
206	**CHESEBROUGH-POND'S**	1987	Consolidated into Unilever U.S. (rank: 63)
207	**A.E. STALEY MANUFACTURING**	1986	Renamed Staley Continental (1985); reclassified as Service
210	**NATIONAL CAN**	1984	Acquired by Triangle Industries (rank: 111)
214	**HAMMERMILL PAPER**	1985	Acquired by International Paper (rank: 42)
221	**KOPPERS**	1987	Acquired by Beazer (Britain)
223	**LEVER BROTHERS**	1987	Consolidated into Unilever U.S. (rank: 63)
230	**ALUMAX**	1986	Acquired by Amax (rank: 117)
235	**MARMON GROUP**	1985	Pritzker family redeemed outstanding public stock.
236	**LEAR SIEGLER**	1986	LBO led by Forstmann Little
239	**NL INDUSTRIES**	1987	Acquired by Valhi (rank: 188)
244	**ANDERSON CLAYTON**	1986	Acquired by Quaker Oats (rank: 88)
249	**STAUFFER CHEMICAL**	1984	Acquired by Chesebraugh-Pond's; subsequently sold
250	**MONFORT OF COLORADO**	1986	Acquired by ConAgra (rank: 44)
252	**MOBAY CHEMICAL**	1985	Consolidated into Bayer USA (rank: 99)
253	**ALLIS-CHALMERS**	1987	Emerged from Chapter 13 (1988) as a smaller company
258	**BLUE BELL**	1983	LBO; subsequently acquired (1986) by VF (rank: 170)
267	**HUGHES TOOL**	1986	With Baker International formed Baker Hughes (rank: 184)
268	**G. HEILEMAN BREWING**	1986	Acquired by Bond Corp. Holdings (Australia)
276	**RICHARDSON-VICKS**	1985	Acquired by Procter & Gamble (rank: 15)
277	**MILES LABORATORIES**	1985	Consolidated into Bayer USA (rank: 99)
282	**BOC**	1984	Consolidated into BOC Group (Britain)
283	**U.S. INDUSTRIES**	1983	Acquired by Hanson Industries NA (rank: 67)
284	**TRANE**	1983	Acquired by American Standard (rank: 123)
293	**THOMAS J. LIPTON**	1987	Consolidated into Unilever U.S. (rank: 63)
295	**NVF**	1986	Steel subsidiary entered Chapter 11 (1987)
296	**G.D. SEARLE**	1984	Acquired by Monsanto (rank: 51)
297	**CHROMALLOY AMERICAN**	1986	Acquired by Sun Chemical; renamed Sequa (rank 210)
303	**AMF**	1984	Acquired by Minstar (rank: 486)
308	**EX-CELL-O**	1985	Acquired by Textron (rank: 61)
312	**GENERAL CINEMA**	1987	Reclassified as Retailing
313	**LONE STAR INDUSTRIES**	1987	Sold assets, reducing sales
325	**CLUETT PEABODY**	1985	Acquired by West Point-Pepperell (rank: 195)
336	**BROCKWAY**	1987	Acquired by Owens-Illinois (rank: 129)
337	**CBI INDUSTRIES**	1985	Reclassified as Diversified Service
340	**HOUSEHOLD MANUFACTURING**	1987	Split into three subsidiaries by Household International
342	**REXNORD**	1986	Acquired by Banner Industries (rank: 473)
345	**TODD SHIPYARDS**	1985	Entered Chapter 11 (1988)
349	**ANCHOR HOCKING**	1986	Acquired by Newell (rank: 338)
351	**HOOVER UNIVERSAL**	1984	Acquired by Johnson Controls (rank: 144)
353	**KANE-MILLER**	1983	Controlling families bought in outstanding stock.
356	**CAPITAL CITIES COMMUNICATIONS**	1985	Reclassified as Diversified Service
359	**NATIONAL STARCH & CHEMICAL**	1987	Consolidated into Unilever U.S. (rank: 63)
360	**MIDLAND-ROSS**	[illegible]5	LBO led by Forstmann Little
361	**MAGIC CHEF**	1985	Acquired by Maytag (rank: 216)
362	**REICHHOLD CHEMICALS**	1986	Acquired by Dainippon Ink & Chemicals (Japan)
366	**SCOVILL**	1984	Acquired by First City Industries
368	**NI INDUSTRIES**	1983	Acquired by Masco (rank: 175)
370	**NEWMONT MINING**	1987	Sold $1 billion of assets, reducing sales
371	**DAYCO**	1986	Acquired by M.A. Hanna (rank: 330)

continued

was for executives to take their companies out of play by going private. Fifteen companies from the 1983 lineup, including Levi Strauss and Singer, dropped off the list through such action. A number of others, such as Beatrice, also went private but stayed on the 500 because they issue public debt and therefore must file public financial statements.

The weakening U.S. dollar during the past five years made U.S. companies vulnerable to transoceanic assault as well. Altogether 20 members of the 1983 list disappeared into the maw of foreign companies. Half of those went to British acquirers. The U.S. subsidiary of Unilever folded five former 500 companies into its operations (Stauffer Chemical, Chesebrough-Pond's, Lever Brothers, Thomas J. Lipton, and National Starch & Chemical), while Hanson's North American subsidiary picked up three U.S. businesses (Kidde, SCM, and U.S. Industries). Perhaps surprisingly, only three companies fell to Japanese invaders: Firestone Tire & Rubber, Gould, and Reichhold Chemicals.

Altogether 20 members of the 1983 list disappeared into the maw of foreign companies. Half of those went to British acquirers.

Managers by now have grown accustomed to this era of acquisitions and constant, wrenching change. Yet possibly the half-decade ahead will not be so tumultuous as the one just ending, at least when it comes to the composition of the 500. A recession, if one sooner or later occurs, would probably dampen enthusiasm as acquirers strained to service some of that debt piled up in better times. Michael Milken is in remission, and arguably the easiest, most sensible deals have been done. All very reassuring. But after the past five years, who would dare to relax? *continued*

WHERE THEY WENT

MERGED OR ACQUIRED
WENT PRIVATE
NO LONGER INDUSTRIAL
TOO SMALL
LIQUIDATED

1983 RANK		LAST APPEARANCE	
375	SMITH INTERNATIONAL	1985	Too small
376	PABST BREWING	1984	Acquired by S&P
378	COLLINS & AIKMAN	1986	Acquired by Wickes Cos. (Retailing)
380	SOUTHWEST FOREST INDUSTRIES	1986	Acquired by Stone Container (rank: 122)
382	BADISCHE	1984	Consolidated into BASF (rank: 93)
384	ECONOMICS LABORATORY	1987	Reclassified as Diversified Service
387	HOOVER	1984	Acquired by Chicago Pacific (rank: 250)
390	JOY MANUFACTURING	1987	Renamed Joy Technologies (1987); too small
392	HARCOURT BRACE JOVANOVICH	1987	Reclassified as Diversified Service
394	GENESCO	1983	Reclassified as Diversified Service
395	M/A-COM	1987	Too small
396	KAISER STEEL	1983	Too small
397	SCOTT & FETZER	1985	Acquired by Berkshire Hathaway (rank: 205)
398	IDLE WILD FOODS	1985	Acquired by Union Holdings
402	MEI	1985	Acquired by PepsiCo (rank: 26)
404	SYBRON	1985	LBO led by Forstmann Little
410	COLECO INDUSTRIES	1987	Too small
412	M. LOWENSTEIN	1984	Acquired by Springs Industries (rank: 222)
415	SANDERS ASSOCIATES	1985	Acquired by Lockheed (rank: 33)
416	ACF INDUSTRIES	1983	Acquired by Icahn & Co.
417	GULFSTREAM AEROSPACE	1984	Acquired by Chrysler (rank: 7)
426	NASHUA	1986	Reclassified as Diversified Service
430	MICHIGAN MILK PRODUCERS	1986	Too small
432	DR PEPPER	1983	LBO; merged (1988) into Dr Pepper/Seven-Up (rank: 491)
434	BUCYRUS-ERIE	1983	Too small
438	BANGOR PUNTA	1983	Acquired by Lear Siegler, which went private (1987)
440	DATAPOINT	1985	Too small
444	STOK[illegible]VAN CAMP	1983	Acquired by Quaker Oats (rank: 88)
445	CESSNA AIRCRAFT	1984	Acquired by General Dynamics (rank: 41)
449	GEORGIA KRAFT	1987	Acquired by Temple-Inland (rank: 200)
452	REVERE COPPER & BRASS	1985	LBO led by Oxford Financial Group
454	ROLM	1984	Acquired by IBM (rank: 4)
457	EASCO	1985	Acquired by Equity Group Holdings
459	ROYAL CROWN COS.	1983	Acquired by Chesapeake Financial
460	AMERICAN BAKERIES	1985	LBO by management; liquidated (1988)
462	ROPER	1987	Acquired by General Electric (rank: 5)
463	COACHMEN INDUSTRIES	1984	Too small
467	PALM BEACH	1984	Too small
468	GUARDIAN INDUSTRIES	1985	LBO by management
469	CECO	1985	LBO by management
471	LIQUID AIR	1987	Company no longer files public figures
477	PRENTICE-HALL	1983	Acquired by Gulf & Western (Diversified Service)
480	WISCONSIN DAIRIES COOPERATIVE	1986	Too small
481	PEABODY INTERNATIONAL	1983	Too small
483	DIEBOLD	1984	Too small
484	HOLLY	1983	Too small
485	HARTE-HANKS COMMUNICATIONS	1987	Went private (1984); returned to 500 (1986); now too small
486	BAIRNCO	1987	Too small
492	OAK INDUSTRIES	1984	Too small
495	TRACOR	1986	Acquired by Westmark Systems
496	MOORE MCCORMACK RESOURCES	1986	Too small
497	HYSTER	1983	Acquired by ESCO
498	RIEGEL TEXTILE	1984	Acquired by Mt. Vernon Mills
499	MASONITE	1983	Acquired and subsequently sold by USG (rank: 152)

WHAT EVER HAPPENED TO THE FORTUNE 500 TOP 50 OF 1954?

1954 RANK		1988 RANK	or LAST APPEARANCE	
1	GENERAL MOTORS	1		
2	STANDARD OIL (N.J.)	3		Name changed to Exxon 10/25/72
3	U.S. STEEL	23		Name changed to USX 7/8/86
4	GENERAL ELECTRIC	5		
5	SWIFT		1983	Acquired by Beatrice 7/7/84
6	CHRYSLER	7		
7	ARMOUR		1969	Acquired by Greyhound 12/28/70
8	GULF OIL		1983	Acquired by Chevron 6/15/84
9	SOCONY-VACUUM OIL	6		Name changed to Mobil Oil 5/18/66
10	DU PONT (E.I.) DE NEMOURS	9		
11	BETHLEHEM STEEL	82		
12	STANDARD OIL (IND.)	12		Name changed to Amoco 4/23/85
13	WESTINGHOUSE ELECTRIC	27		
14	TEXAS CO.	8		Name changed to Texaco 5/1/59
15	WESTERN ELECTRIC		1983	Become part of AT&T listing
16	SHELL OIL	13		
17	NATIONAL DAIRY PRODUCTS		1987	Acquired by Philip Morris 12/7/88
18	STANDARD OIL OF CALIFORNIA	11		Name changed to Chevron 7/1/84
19	GOODYEAR TIRE & RUBBER	32		
20	BOEING AIRPLANE	19		Name changed to Boeing 5/2/61
21	SINCLAIR OIL		1968	Merged with Atlantic Richfield 3/4/69
22	INTERNATIONAL HARVESTER	113		Named changed to Navistar International 2/20/80
23	RADIO CORP. OF AMERICA		1982	Moved to Service 500 in 1982
24	UNION CARBIDE & CARBON	50		Name changed to Union Carbide 4/16/57
25	FIRESTONE TIRE & RUBBER		1987	Acquired by Bridgestone* 5/5/88
26	DOUGLAS AIRCRAFT	25		Name changed to McDonnell Douglas 4/28/67
27	PROCTER & GAMBLE	15		
28	REPUBLIC STEEL		1983	Acquired by LTV 6/29/84
29	CITIES SERVICE		1981	Acquired by Occidental Petroleum 12/3/82
30	PHILLIPS PETROLEUM	31		
31	GENERAL FOODS		1985	Acquired by Philip Morris 9/27/85
32	U.S. RUBBER**		1985	Acquired by Clayton & Dubilier 5/6/85
33	BORDEN	59		
34	LOCKHEED AIRCRAFT	33		Name changed to Lockheed 9/30/77
35	ALUMINUM CO. OF AMERICA	40		
36	INTERNATIONAL PAPER	42		
37	WILSON & CO.	276		Name changed to Wilson Foods 10/14/76
38	SUN OIL	48		Name changed to Sun Co. 4/27/76
39	UNITED AIRCRAFT	16		Name changed to United Technologies 5/1/75
40	AMERICAN CAN		1986	Name changed to Primerica 4/28/87†
41	GENERAL DYNAMICS	41		
42	NORTH AMERICAN AVIATION	28		Name changed to Rockwell International 2/16/73
43	EASTMAN KODAK	18		
44	GOODRICH (B.F.)	169		
45	CONTINENTAL CAN		1983	Acquired by Peter Kiewit Sons' 11/1/84
46	BENDIX AVIATION		1982	Acquired by Allied-Signal 1/31/83
47	ATLANTIC REFINING	17		Name changed to Atlantic Richfield 1/3/66
48	INLAND STEEL	116		Name changed to Inland Steel Industries 5/1/86
49	ARMCO STEEL	140		Name changed to Armco 7/1/78
50	ALLIED CHEMICAL & DYE	29		Name changed to Allied-Signal 9/19/85

*FORTUNE 1987 International 500, No. 120. **Name changed to Uniroyal 2/27/67. †FORTUNE 1987 Diversified Financial Companies, No. F-18.

JOHN MARGOLIES—ESTO

Gulf, the highest-ranking company displaced from the 500 in the past five years, was one of the original top ten.

The appearance of two meatpackers, Swift and Armour, among the top ten industrial companies of 1954 shows the age of that list. Otherwise the broad-shouldered giants at the apex of the first FORTUNE 500 are a surprisingly modern bunch. Six of the top ten were the same then as now, and Ford probably would have made it in 1954 had it been public. Only IBM, which has climbed from No. 61 to No. 4 since the original list, would have seemed out of place at the top in the 1950s. Fifteen of the original 50 companies no longer appear, but ten of them were acquired by companies still on the list, all among the top 60. As a group, steel companies have fared the poorest. The four still included on the 500 have tumbled a combined 250 spots. On the overall list, the company that fell the furthest, Wilson & Co., was acquired earlier this year by Doskocil of South Hutchinson, Kansas—of all things, a meat company. F

WHERE THEY WENT

MERGED OR ACQUIRED
WENT PRIVATE
NO LONGER INDUSTRIAL
ON THE 1988 500 LIST

A LATIN DEBT PLAN THAT MIGHT WORK

The Brady proposal lays out a plausible scheme for solving the monstrous problem—but only if the debtor countries clean up their messy economies. That's a big if. ■ *by Jeremy Main*

TREASURY SECRETARY Nicholas Brady has set U.S. policy toward the Third World's mountain of debt on the most promising course yet. Finally there's a chance—slim but real—that the rich and the poor countries can begin to work their way out of a monstrous problem. Yes, the scheme is short on details, but it gives both sides a reason to negotiate, sets limits on what they can expect, and gives everyone with a stake in the outcome freedom to devise creative approaches.

The proposal Brady outlined pushes banks to accept lower payments on increasingly unsafe Latin loans that have been discounted in the money markets to a fraction of their original value. In exchange they would get assurances that the reduced amounts will be paid. Japan and other developed countries would provide fresh capital to the international lending agencies, as well as to the debtor countries. To Latin America the proposal offers the hope of relief from an economic decline that is pushing desperate people to the point of explosion, as it did in Venezuela in February.

Make no mistake: The hard work is only beginning. The most crucial of the missing details is a plan to force economic reform on the debtors, who owe $1.3 trillion. Politicians south of the border like to blame their falling living standards on *yanqui* bankers, but worse damage comes from home-grown problems: overwhelming deficits and inflation, corrupt bureaucracies, and huge, inefficient state enterprises. Even if all the debts were wiped off the books tomorrow, Peru and Bolivia would certainly remain economic basket cases, Argentina probably, and Brazil perhaps.

What makes the plan plausible nonetheless is that borrowers and lenders both have powerful reasons to heed the Brady call. The banks need to end uncertainty and collect what they can. The U.S. and the international agencies will push them to cooperate in giving the borrowers a break. The borrowers desperately need new capital to restart the growth of their economies. They will find it harder than before to resist the demands for reform that will be tied to any help they get. The alternative, the utter disaster of default, looms ever larger.

PAUL FETTERS

Brady pushed the bankers off a cliff.

A SAD SAGA OF BORROWING AND MISMANAGEMENT

COUNTRY	TOTAL DEBT IN 1988 in billions	CHANGE IN TOTAL DEBT SINCE 1982[1]	INTEREST PAID IN 1988 AS A % OF EXPORT EARNINGS	CHANGE IN REAL GDP 1982-88[2]	CHANGE IN PER CAPITA GDP 1982-88[2]
Brazil	$115.2	+34.9%	40.5%	+24.6%	+9.4%
Mexico	$105.0	+19.7%	51.6%	−0.4%	−13.4%
Argentina	$58.4	+33.9%	36.2%	+8.7%	−0.8%
Venezuela	$37.8	+10.9%	33.5%	+1.8%	−13.7%
Peru	$20.5	+66.5%	7.3%	−0.1%	−14.4%
Chile	$19.5	+12.6%	21.5%	+29.1%	+16.6%

[1] Based on average exchange rate for each year. [2] Calculated in local currencies.

SOURCES: DRI/McGRAW HILL

Latin America has been struggling since 1982 to cope with its debt, but the burden of paying interest has contributed to a big drop in personal incomes and slowed economic growth.

Details will emerge on a case-by-case basis as rescue plans are framed for each country. Mexico will be the first up because it needs $4 billion quickly and because it is looked upon favorably by the world's bankers. The new government of President Carlos Salinas de Gortari is highly competent in economic matters, Mexico has done much to free up its economy and considerably more than the U.S. to cut its deficits, and investors find the country promising. Mexico would likely get the fast $4 billion it needs to cover the difference between interest due and its current account earnings under any circumstances. But the Brady plan gives it room to ask for much more. Salinas would like to halve his country's $65 billion in commercial bank loans. He certainly won't get that soon, but Mexico might be able to swap or buy back its loans at, say, a 35% discount or negotiate a reduction in interest rates that would have an equivalent effect.

The banks, instead of holding increasingly unhealthy Mexican paper, will acquire

AP/WIDE WORLD

Rioting and looting greeted the attempts of Venezuela's new President, Carlos Andrés Pérez, to impose the austerity and price increases demanded by foreign creditors.

new bonds backed with either guarantees or informal assurances by the World Bank or the International Monetary Fund. Under the old Baker plan, formulated in 1985 by Brady's predecessor, James A. Baker III, the $4 billion would have been financed by new loans simply added to Mexico's debt burden—with the delusive hope that the Mexican economy could eventually grow big enough to cope with its debt.

A PROTOTYPE of the bond scheme fell short last year when J.P. Morgan organized an auction to exchange debt for 20-year Mexican government bonds secured by zero-coupon U.S. government bonds. Mexico could have swapped up to $10 billion in debt at a 50% discount but exchanged only $3.7 billion at an average of 30%. The auction reduced debt by a disappointing $1.1 billion, not much for a country that owes $105 billion altogether. But a new auction offering guaranteed interest as well as principal could be more successful.

The Brady plan, or something like it, was long overdue. When Mexico unleashed the crisis in 1982 by suspending its loan payments, both the overextended banks and the overborrowed developing countries were gravely threatened. The banks had not set aside reserves for their Third World debt, which amounted to nearly double their equity.

Now most banks are in better shape to take a hit. Over the past couple of years they have built up their reserves (see table, page 212). U.S. money-center banks on average have enough to cover about 30% of their Third World loans, while some European banks are 90% and even 100% reserved. Japanese banks are allowed to reserve no more than 15%, but they are eager to settle anyway so they can start to make major new loans in Latin America and create new export markets. At the same time the loans have become worth less in the world markets where debt paper is traded, mainly by the banks themselves. Mexican debt was recently going for 40 cents on the dollar, Brazilian 32, Argentine 18, Bolivian 9, and Peruvian 3. Chile and Uruguay, whose economies are the soundest, can sell their debt for nearly 60% of face value.

Harvard professor Jeffrey Sachs, who has helped Latin American countries with their debt problems, believes that any American bank could survive a settlement of 50 cents on the dollar and that many would accept that figure to put the problem behind them. The most eager would be smaller banks, which just want to forget about Latin America.

Brady offered a vague promise of help when he proposed reducing and streamlining regulations that hold up debt settlements. For example, U.S. banks can get credits only when an entire loan goes down the drain. European banks, by contrast, can take a tax deduction as soon as they set up a reserve against a shaky loan. L. William Seidman, chairman of the Federal Deposit Insurance Corp., advocates allowing U.S. banks to take tax deductions for partial loan write-offs.

UNLIKE THE BANKS, the borrowers have mostly sunk into increasingly pitiful conditions since 1982. Starved of new capital, hopelessly mismanaged, mangled by inflation that often reached the three- and sometimes four-digit level, they have watched their GNPs and real wages drop. Over the past seven years Latin American countries made a net transfer of $160 billion to the industrialized countries—not including the estimated $300 billion their own citizens have sent abroad for safety.

The Bush Administration might have liked more time to work out the details of a new debt plan, but late last year events began pressing in. Other creditors were becoming impatient for a solution. For fear of losing face and leadership, the U.S. had to dissuade Japan from presenting a detailed debt plan at an economic summit in Toronto last year. (Brady's proposal bears more than a passing resemblance to it.) Then came the Venezuelan riots and the specter of democracy under fire throughout Latin America. The architect of the Brady plan, David Mulford, undersecretary designate for international affairs and a veteran of world banking in and outside the Treasury, shoved the plan through the short-staffed Administration without the usual exhaustive studies and approvals. Says Richard Medley, an international bank consultant in Washington: "Brady pushed the bankers and the debtors off the cliff, hoping someone will put some water in the canyon below before they hit bottom."

Providing the water will be a horrendously complicated task. In Mexico alone, 600 banks will be affected by any settlement. The hardest to persuade will be some

REPORTER ASSOCIATE *Carol Davenport*

of the bigger American banks that lent more aggressively—most notably Citibank—and intend to stay in Latin America in order to go where their customers go. But Brady has made it plain to the banks that reluctant ones may not have the power to veto deals as they have in the past.

These and scores of other issues are the subject of intense and esoteric discussions couched in language so arcane even bankers find them hard to penetrate. Financial leaders speed around the world looking for money and solutions. Mexico's able MIT-trained finance minister, Pedro Aspe, begins a week in Washington negotiating terms of the Brady plan, goes on to Tokyo to line up new capital, and finishes the week in Amsterdam at an international bank meeting. As an intellectual exercise, says a senior World Bank official, dealing with Third World debt "is the most fascinating and challenging thing I have ever done."

WHILE the Brady proposal has laid out the principles of the rescue effort, it leaves room for many types of solutions. More than a score of plans and approaches are ready to be plucked from the brains of the world's bankers and economists.

American Express Chairman James D. Robinson III, for example, has called for an Institute of International Debt and Development to buy up loans at discount rates. The agency—Robinson would nickname it I2D2—would issue bonds backed by the industrial countries, and also preferred shares that would pay dividends if the borrowers' economies got stronger. The Japanese propose to provide up to $10 billion in "parallel" credits to go with funding from international agencies. Pedro-Pablo Kuczynski, chairman of First Boston International and author of a book on Latin debt, believes an equity kicker could get debt relief moving. He argues that loans should be converted at a discount fair to both sides—somewhere between 35% and 45%—but that if the debtors' exports grow to a certain level, then the creditors would be paid more.

Debt-equity swaps add another dish to the menu of solutions. In this type of swap a foreign investor buys the debt at a discount, converts it to local currency, and plows it back into local business or property. That can be anything from a factory to a soccer player—Philips NV acquired the rights to a Brazilian star, Romario Farias, to play for its team in the Netherlands.

Chile has reduced its debt by more than 10% through swaps, partly because Chile's market-oriented economic policies make it attractive to investors. But other Latin Americans are turning against swaps because xenophobes see them as sellouts to foreigners, and governments call them inflationary—which, of course, they are when a government pays for them by printing money, as Argentina and Brazil have done. After making $7.5 billion worth of swaps last year, Brazil suspended the program, and Mexico has done the same. Swaps probably have a useful but limited future.

Rising interest rates made the debtors' burden heavier in recent years, and lower rates would lighten it—but no likely decline will get them off the hook. The possibility floated by the U.S. Treasury of a 20% reduction in debt doesn't excite Latin Americans. Say rates on most American bank loans to Mexico continue to be calculated by adding thirteen-sixteenths to the London Interbank Offered Rate (Libor). In the past year Libor rose nearly four points, to 11%. If Mexico's $65 billion debt to commercial banks was reduced 20% to $52 billion by the sale of bonds or some other swap, interest payments would fall from $7.7 billion to $6.1 billion, nowhere near enough to cover even Mexico's immediate needs. The debt would have to be cut in half to stop Mexico from falling behind. Its payments would also drop to a manageable level if the bankers took a cut in interest rates from the Libor formula to, say, 5% or 6%. Reductions on these scales are unlikely, at least in the first round.

BANKS ARE GETTING STRONGER

BANK	DEVELOPING-COUNTRY LOANS AS A % OF EQUITY, AFTER RESERVES 2nd qtr. 1987	4th qtr. 1988
Manufacturers Hanover	302%	204%
BankAmerica	263%	157%
Chase Manhattan	185%	119%
Chemical Banking	156%	116%
Citicorp	167%	93%
Bankers Trust	133%	86%
Bank of New York	30%	61%
J.P. Morgan	86%	60%
First Chicago	129%	51%

Major U.S. banks with loans amounting to more than 50% of equity.

SOURCE: SALOMON BROTHERS

By adding to reserves and equity, American banks have made themselves less vulnerable to loans that go sour.

MANY STUDENTS of the debt problem feel the cuts will have to be even bigger. Kuczynski of First Boston argues that Latin American commercial bank debt would have to be sliced by a third just to bring interest payments back to their level of early 1988. That would be equivalent to some $86 billion. Business Environment Risk Information, an international consulting group in Washington, D.C., is even more bearish. Like some European banks, it suggests that real help means rates of only 2% or 3%, capitalized over 30 years for the worst cases. But U.S. taxpayers would probably just as soon see those countries go up in smoke as pay for such a giveaway.

Whatever breaks the creditors give Latin America, the performance of the countries themselves will determine whether they get the new capital needed to help them grow out of their misery. Apart from its size and proximity to the U.S., Mexico is the Treasury's current favorite candidate because its economically savvy government is making the right moves. Argentina, on the other hand, offers little reason to attract a new deal. Its government is paralyzed by repeated failure, an election coming up May 14 may produce a demagogue President, and the country is $2 billion in arrears on debt payments.

Most Latin American republics can't even hold on to their own money. The estimated $300 billion in flight capital sent abroad by Latin Americans is more than the total bank credit owed by their countries, now $257 billion. Many of the borrowed dollars went right into hiding in Switzerland or the U.S. before they could make a mark. If the owners of these foreign deposits and investments would repatriate just the interest they earn, Latin America could meet most of its current bills. And if they repatriated the principal, the debtors could settle most of their accounts. But there's no way of forcing the money to come home to malfunctioning economies. No amount of debt reduction and relief will work unless the afflicted countries straighten themselves out. ■

JAPAN'S RISING DEFENSE INDUSTRY

Its military contractors want to waive the rules that ban overseas sales, and some are pressing for more spending at home. Should U.S. companies be worried?

■ *by Carla Rapoport*

MILITARY EXPENDITURES

COUNTRY	1988 est.	1987
	in billions U.S. $	
United States	$307.7	$296.2
France	$35.9	$34.8
West Germany	$35.4	$34.1
Britain	$34.9	$32.8
Japan	$28.9	$24.3

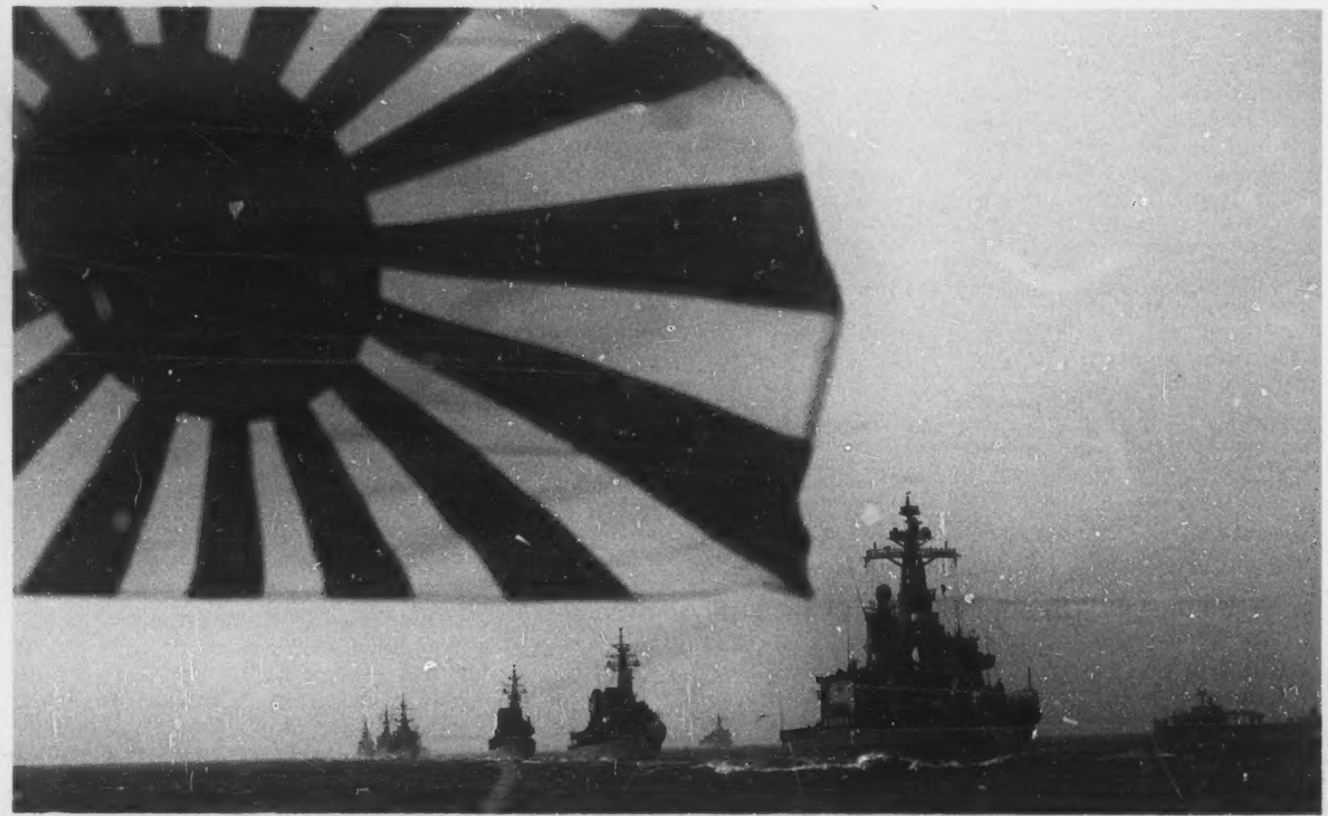
SOURCE: U.S. ARMS CONTROL AND DISARMAMENT AGENCY

WHILE CONGRESS was agonizing over whether to give technology to the Japanese so they can produce a new jet fighter, the debaters missed a much larger point. Japan already has a multibillion-dollar defense industry. More than that, its arms makers are rapidly catching up with the U.S. lead in military technology—and now they want to go global.

You haven't seen Mitsubishi tanks rolling through the world's trouble spots for a good reason. In a burst of pacifism in 1976, the government banned exports of firearms, ammunition, military vehicles, ships, and aircraft. The ban has been weakening in recent years, and it never covered the fast-growing area of electronic components. Some of Japan's largest defense contractors think the restrictions should fade away completely.

Just like the leaders of other Japanese industries, they want higher sales through exports, primarily to the U.S. They also want joint ventures with American defense contractors. According to Kosaku Inaba,

Warships like these near Tokyo Bay unnerve neighbors. Rather than build more, military producers hope to sell smart weapons to the U.S.



PHOTOGRAPH BY ROBERT WALLIS—JB PICTURES

Long in the tooth? Some of the technology in Japan's F-4 Phantoms goes back to the 1950s.

ROBIN MOYER

president of Ishikawajima-Harima Heavy Industries (IHI), a leading defense contractor, the Japanese seek economies of scale so that they can reduce the cost of their own military hardware while increasing research and development. Says he: "Both the U.S. and Japan want to introduce the latest knowledge and best technology in their military equipment. We should use the best of both sides."

THE BAN began eroding in the early 1980s. Japan agreed to sell some of the components and systems it was developing for its own forces, but only to the U.S. The Pentagon sent several teams to see what Japan could provide. At the moment Washington is very interested in (1) a so-called ducted-rocket engine design that theoretically would push a missile faster on less fuel than current models and (2) a new Japanese technique for demagnetizing ships under way to avoid distortions of navigation and other electronic equipment.

American arms makers already depend heavily on Japanese subcontractors for many components, including semiconductor chips for guided missiles and camera lenses used in reconnaissance. Since these products are classified by Japan's ministry of international trade and industry (MITI) as having both commercial and military applications, they do not fall under the export ban. The size of this trade is unknown. The Pentagon says it has no idea how many foreign components are inside the goods it buys, and the Japanese Defense Agency won't say anything at all.

MITI officials insist there will be no further changes in the export rules. Inaba, who also heads Japan's defense contractors' association, isn't so sure. He points out that the ban is not a law but a set of guidelines issued by a previous cabinet. Says he: "I think [the restrictions] must be softened in the future, step by step." His timetable for getting rid of them? Five to ten years.

The Japanese should benefit from the new emphasis on so-called smart weapons based on electronics and superlight, superstrong materials. Electronics companies like NEC, Toshiba, and Mitsubishi Electric feel they can compete on a fairly equal basis with such U.S. defense stars as Hughes and Rockwell.

NEC executives say that attention to detail and quality control makes Japanese companies particularly reliable defense contractors. Hiroshi Nagata, a retired admiral who is now an adviser to NEC, claims that Japan is especially strong in electronic subsystems, used in aircraft or missile controls. Says he: "The reliability of those products produced under license is higher than those of the same products made in the U.S." Knowledgeable Americans privately agree.

JAPANESE COMPANIES have another advantage. Defense contracts make up a small portion of total sales. "If we have an electronics breakthrough on our commercial side that can be applied to defense, we do it," explains an NEC official in Tokyo. A recent study of the U.S. defense industry published by the Aerospace Education Foundation, a private American organization, agrees: "Defense procurement no longer dominates the development of high-technology products. The market is now driven by commercial needs, not by military considerations."

The Pentagon has been aware of this switch for some time, fretting about the steady decline of the U.S. consumer electronics industry. Just 12 years ago, for example, the most powerful memory chips were turned out by nine U.S. companies and four in Japan. Today there are ten Japanese producers and only three in the U.S. John Stern, who represents the American electronics industry in Tokyo, says with a note of bitterness in his voice: "Defense electronics is a very good business for Japan. It's not that the Japanese are rearming or becoming militaristic, but that they know an opening when they see one. We're just hoping that the Pentagon won't turn its back on American industry the way big U.S. retailers did."

At the moment Stern shouldn't lose too much sleep. While Japan's spending on military equipment has more than doubled since 1983, it will be only about $9 billion

REPORTER ASSOCIATE *Carrie Gottlieb*

TOP TEN DEFENSE CONTRACTORS

UNITED STATES
Year ended 9/30/88

COMPANY	VALUE OF CONTRACTS in millions
McDonnell Douglas	$8,003
General Dynamics	$6,522
General Electric	$5,700
Tenneco	$5,058
Raytheon	$4,055
Martin Marietta	$3,715
General Motors	$3,550
Lockheed	$3,538
United Technologies	$3,508
Boeing	$3,018

SOURCE: U.S. DEPARTMENT OF DEFENSE

JAPAN
Year ended 3/31/88

COMPANY	VALUE OF CONTRACTS in millions
Mitsubishi Heavy Industries	$1,898
Kawasaki Heavy Industries	$1,239
Mitsubishi Electric	$626
Ishikawajima-Harima	$543
Toshiba	$526
NEC	$439
Japan Steel Works	$176
Fujitsu	$161
Komatsu	$153
Hitachi Zosen	$151

SOURCE: JAPAN DEFENSE AGENCY

this year, vs. the U.S.'s $81 billion. Japan's expenditures should continue to grow, reaching about $22 billion by the end of the next decade. Even if U.S. spending stayed the same, which is unlikely, Japan would still be far behind.

While size isn't their long suit, the Japanese claim that manufacturing skills are. James Auer, director of U.S.-Japan studies at Vanderbilt University, tends to agree. A nine-year veteran of the Pentagon, he has taken a close look at Japanese techniques for miniaturizing and muffling the sounds of machinery. He believes that Japan can contribute more advanced defense technology than any other U.S. ally. Auer argues that, assuming the Japanese continue to develop their manufacturing and technical skills, the best way to prevent the Russians from gaining military superiority is to "combine the capabilities of the U.S. and Japan."

Along with increased exports and joint ventures, some leading defense contractors want a much bigger industry at home. Typically they say that Japan has a responsibility to spend more on its own defense as well as that of its allies. Says Hiroshi Morikawa, a managing director of Mitsubishi Electric who heads the company's defense business: "Somehow we must pay more. It's like living in a big city but not paying the policeman. It's impossible." He believes the European level of 3% to 4% of GNP should be Japan's goal.

The contractors get plenty of support from abroad. A U.S. congressional committee last year concluded that Japan's defense contributions are inadequate given its tremendous economic strength. The Japanese spend a little over 1% of GNP. Because their economy is so large, that amounts to a lot of money: fifth among Western allies. The U.S. is way out in front in total spending. France, West Germany, and Britain are bunched together, with Japan not far behind them. Military spending as a percentage of GNP is something else. In 1985, the latest year for which data are available, Japan ranked 133rd in the world, behind Uganda and just ahead of Costa Rica.

MOST JAPANESE policymakers insist that the 1% level is not open for discussion, especially when a foreign government wants to do the discussing. And NEC's Nagata, the former admiral, worries about Japan becoming too powerful. "It would affect the military balance in the world," he says. "I don't think we should do it. We might have nuclear weapons and missiles. Do you want that?"

One thing they all agree on: If defense spending does rise, much of it should go into R&D. Government-sponsored R&D has increased fourfold since 1980, but is still only around $700 million. The U.S. spent some $35 billion last year. Still, even at that level, Japan has some advantages. Gallium arsenide chips, used in missiles and radar systems, are mostly made by Japanese companies.

The Japanese defense industry has its critics. There is almost no competitive bidding, and each company tends to keep the same contracts year after year. Says Hisao Iwashima, a former director of Japan's National Institute for Defense Studies: "Everyone has a monopoly in a particular area. Even the defense agency doesn't know the real cost of those weapons."

Why doesn't the government introduce competition? Because the present system suits Japan's high-tech ambitions. According to a study by MIT professor Richard Samuels and his assistant, Benjamin Whipple, "Japanese policymakers in the 1980s have turned to military spending as a mechanism for industrial development." The so-called heavies like Mitsubishi, Kawasaki, and Fuji have been eager participants because they want to continue diversifying.

One current best-seller in Japan is *A Japan Which Can Say No.* Written by Akio Morita, chairman of Sony, and Shintaro Ishihara, a former minister of transport, the book states: "The heart of the world's defense power is in the hands of Japanese high technology." If they're right, it might be wise for the West to share more technology and buy more hardware from Japan.

DON'T HOLD YOUR BREATH FOR TOYOTAS IN THE SKY

The refrain goes like this: What they did in cars, consumer electronics, and semiconductors, Japan is now about to do in (fill in the blank). If there is a seductive logic about the idea, it's that no one ever got rich by underestimating the Japanese.

Recently the latest blank has been aerospace, following a proposal pushed hard by the Pentagon—over the objections of Senator Jesse Helms among others—to transfer dated U.S. technology to Japan for a new jet fighter code-named FSX. First the FSX, the critics warn, then thousands of flying Toyotas darkening the skies.

If opponents had done their homework, they would have realized that Japan doesn't need American fighter technology to create its own commercial aerospace industry. U.S. planemakers have been sharing technology with the Japanese for more than ten years. The airframe of the Boeing 767, for example, is made with 15% Japanese parts. The Japanese were in on the 767 from the beginning.

Japan produced its own commercial plane more than 20 years ago, the YS-11 twin-engine turbo jet. It is still flying in Japan but never sold well elsewhere. Today the ministry of international trade and industry, which has designated aerospace a *kiban gijitsu*, or key technology, is working on its next brainchild—the YSX, a 75-seat replacement for the YS-11. The plane will be aimed at developing countries in Asia, as well as commuter routes in Japan, the U.S., and Europe.

But Toyotas in the air? Not anytime soon. Takaaki Yamada, head of aerospace for Mitsubishi Heavy, thinks it will be 20 to 30 years before Japan can go it alone in the aircraft business.

ROBERT WALLIS—SIPA

Japan's YS-11: no threat

FORTUNE

THE FORTUNE 500

CONTENTS

THE BIGGEST BLOWOUT EVER 346

THE FORTUNE 500 LARGEST INDUSTRIAL CORPORATIONS 354

DEFINITIONS, EXPLANATIONS, AND NOTES TO THE 500 376

ARRIVALS, DEPARTURES, AND MONEY LOSERS 377

THE 500 RANKED WITHIN INDUSTRIES 380

INDUSTRY MEDIANS AND TOTALS 394

ALPHABETICAL INDEX TO THE FORTUNE 500 398

MIGRATORY HABITS OF THE 500 400

THE FORTUNE 500

LARGEST U.S. INDUSTRIAL

THE BIGGEST BLOWOUT EVER

By virtually every measure, 1988 was the best year ever for the FORTUNE 500. As the U.S. economy expanded for the sixth straight year, demand continued to surge, factories and refineries operated near capacity, and industrial America's sales, profits, and margins just kept getting better. The 500 grew, of course: Sales rose 7.6%, topping $2 trillion for the first time. Profits rocketed to $115 billion, a 27% jump and another record. Profits in constant dollars exceeded those of the previous inflation-adjusted record year, 1980. Any way you cut it, last year was the most prosperous for the 500 since FORTUNE published the first 500 directory in 1955.

The most impressive number is the 500's median return on equity. At 16.2% it easily beats the previous record of 15.9% set in 1979, and is practically in another world compared with last year's 14.4%. Many investors and managers consider ROE the best one-number gauge of how a company is doing, so by this measure the 500 are singing. That is partly because many have added debt, which increases productive resources without increasing equity, and partly because the corporate tax rate has fallen from 46% to 34%. Another factor: The agony of restructuring has turned many U.S. industrials into leaner, stronger competitors worldwide (see page 42).

The individual ROE champ was Sterling Chemicals of Houston. Its say-that-again return: 235%. This petrochemical company looks ever more imposing against the Texas skyline as it continually adds capacity. Sterling generated $213 million in earnings on $699 million in sales last year—not bad for a three-year-old fledgling making its debut on the list at No. 403.

Nearly all of FORTUNE's 27 industry groups posted double-digit earnings growth. Metals shone with a 110% jump, boosted by soaring copper prices and the steel industry's successful restructuring.

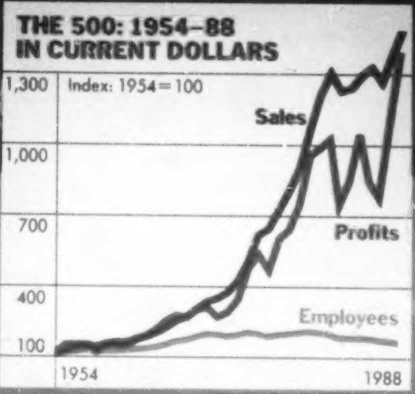
PHOTOGRAPH BY STEVE KRONGARD

America's major steelmakers blacked out dreary memories of their $12 billion of losses in the early Eighties and built upon a modest recovery that began in 1987. Their stunning metamorphosis from notoriously high-cost manufacturers to some of the world's more efficient producers kept plants running almost flat out. Demand came not so much from a traditionally loyal customer, Detroit, but from the capital goods industry. Heavy machinery manufacturers continue to ride the crest of the export boom, buoyed by the weaker dollar.

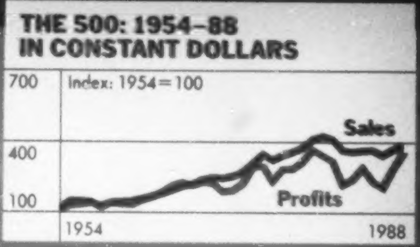
The large oil refiners posted a 63% increase in median profits, benefiting from a double dose of luck: OPEC squabbling drove crude oil prices down, lowering costs, while demand strengthened, increasing prices. This happy coincidence widened margins and made the refiners the 500's leaders in total earnings. Phillips Pe-

HOW THE 500 PERFORMED

THE 500: 1954–88 IN CURRENT DOLLARS



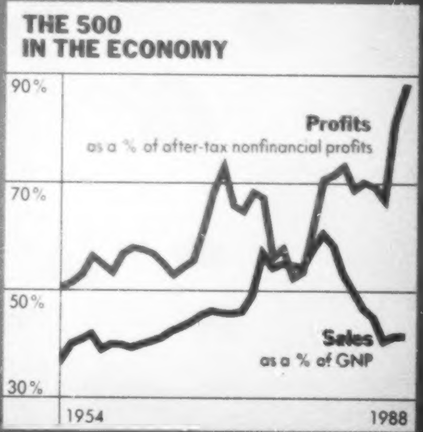
THE 500: 1954–88 IN CONSTANT DOLLARS



THE 500: 1988 vs. 1987

	1988	1987
SALES (billions)	$2,023.1	$1,879.5
CHANGE IN SALES	7.6%	9.1%
PROFITS (billions)	$115.0	$90.6
CHANGE IN PROFITS	26.9%	41.3%
ASSETS (billions)	$2,078.8	$1,705.7
NO. OF SALES INCREASES	419	415
NO. OF PROFIT INCREASES	327	313
NO. OF MONEY LOSERS	42	48
MEDIAN RETURN ON SALES	5.5%	5.1%
MEDIAN RETURN ON ASSETS	6.8%	6.6%
MEDIAN RETURN ON EQUITY	16.2%	14.4%
MEDIAN RETURN TO INVESTORS	14.1%	6.6%
NO. OF EMPLOYEES (millions)	12.7	13.1

THE 500 IN THE ECONOMY



Phelps Dodge (No. 182) ignites 81,000 pounds of explosives at an Arizona copper mine. Profits more than doubled last year.

troleum exploited the situation to multiply profits from $35 million to $650 million—a staggering 18-fold vault. Pennzoil had the greatest dollar increase in profits, but it owed that bounty to an extraordinary gain from its celebrated settlement with Texaco. Before that credit, Pennzoil had an operating *loss* of $187 million.

Pharmaceuticals posted the best returns in the 500 for the third year running. Median ROE was 23.5% as drug companies benefited from the graying of the U.S. and from the payoff on their commitment to research. Merck, the industry's most profitable company, introduced drugs that combat high blood pressure and cholesterol.

Beverages continued to fizz with a median ROE just a fraction below that of pharmaceuticals. Profits from Coca-Cola's international business, which accounts for nearly three-quarters of the company's earnings, boosted the whole industry. Sales abroad also helped the tobacco industry, which is experiencing softer domestic demand. Exports surged when a

BIGGEST GAINERS

THE TEN LARGEST INCREASES IN SALES

	SALES RANK	
HANNA (M.A.)	330	**121.8%**
LORAL	256	**108.8**
SUN MICROSYSTEMS	327	**95.6**
IMO INDUSTRIES	407	**86.5**
DIBRELL BROTHERS	470	**80.1**
BANTA (GEO.)	482	**74.2**
HANSON INDUSTRIES NA	67	**72.3**
STERLING CHEMICALS	403	**69.2**
COMPAQ COMPUTER	202	**68.7**
CYPRUS MINERALS	275	**66.9**

THE TEN LARGEST INCREASES IN PROFITS*

PENNZOIL	201	**3,233.9%**
PHILLIPS PETROLEUM	31	**1,757.1**
AMAX	117	**1,347.1**
TEXAS INDUSTRIES	428	**941.7**
MACK TRUCKS	199	**677.2**
VALHI	188	**670.8**
NAVISTAR INTERNATIONAL	113	**630.5**
PACIFIC RESOURCES	361	**552.4**
CYPRUS MINERALS	275	**550.1**
TIMKEN	245	**538.7**

*Excludes companies that lost money in 1987.

BIGGEST LOSERS

THE TEN LARGEST DECREASES IN SALES

	SALES RANK	
MAXUS ENERGY	460	**52.8%**
MINSTAR	486	**40.9**
FAIRCHILD INDUSTRIES	455	**34.0**
GENCORP	204	**33.9**
GOLD KIST	328	**30.4**
ALLEGHENY INTERNATIONAL	341	**30.4**
BURLINGTON HOLDINGS	174	**25.2**
AMSTAR	325	**24.5**
FRUEHAUF	196	**23.0**
CHAMPION SPARK PLUG	374	**21.2**

THE FIVE LARGEST DECREASES IN PROFITS*

MANVILLE	190	**1,910.3%**
EAGLE-PICHER INDUSTRIES	379	**1,264.8**
ROBERTSON (H.H.)	494	**1,218.8**
LTV	56	**727.5**
CUMMINS ENGINE	135	**556.9**

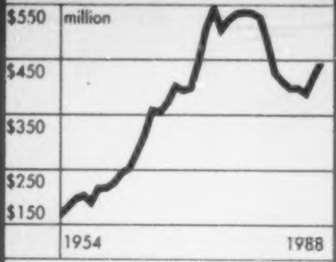
*Decreases over 100% reflect swings from 1987 profits to 1988 losses.

THE FIVE LARGEST LOSSES

		$ MIL.
LTV	56	**$3,153.6**
MANVILLE	190	**1,314.3**
EAGLE-PICHER INDUSTRIES	379	**465.8**
HONEYWELL	60	**434.9**
AVON PRODUCTS	132	**404.5**

WHY HAS NO. 500 BEEN SHRINKING?

SALES OF THE 500th COMPANY IN CONSTANT DOLLARS



Being ranked No. 500 just doesn't mean what it used to. Cincinnati's Chemed Corp., best known as the *other* company that Peter Grace chairs, sits at the bottom of this year's FORTUNE 500 with sales of $500.6 million. But when those sales are measured in constant, inflation-adjusted 1982 dollars, Chemed's revenues are some $100 million less than the 1974 sales of Tyler Corp., a chemical and pipe manufacturer and the record holder as the largest 500th company ever.

Why is No. 500 smaller in real terms than it once was? Is U.S. manufacturing becoming more concentrated in fewer firms? Surprisingly, the answer appears to be no.

In the past five years, mergers and acquisitions were indeed the commonest reasons for companies leaving the list (see page 77). But other factors were also at work. As corporations restructure, they spin off operations. That can turn a FORTUNE 500 company into several smaller ones. A few companies depart each year because they transform themselves into service companies (and show up on the Service 500). Others go private through leveraged buyouts and don't report financial results. Several companies fall off the list each year because reverses leave them too small. Vacancies created by all these factors pull up companies from below.

Industrial concentration doesn't appear to have grown. The Justice Department tracks concentration of assets and employees among America's largest nonfinancial companies. The most recent data show that aggregate concentration has declined since the 1970s. – **Edward C. Baig**

tougher U.S. stance on trade pried open important markets in South Korea and Japan.

Median profits declined for only two of the 27 industry groups: apparel, down 3%, and building materials, down 18% as housing starts declined for the second straight year.

As always, the titans at the top of the list jostled one another a bit. General Motors remained the largest, with $121 billion in sales. But Ford passed Exxon to become No. 2, and General Electric moved into the No. 5 spot, pushing Mobil down to No. 6. The reason for these and several other changes on the list: a new rule from the Financial Accounting Standards Board requiring companies to consolidate results of all their majority-owned subsidiaries. Ford, GE, and many other industrials own finance subsidiaries, results of which were previously reported separately. Included with the rest of a company's numbers, they give a substantial kick to revenues (see box, facing page).

Many of the newcomers to the list should look familiar. Some are spinoffs from FORTUNE 500 companies, while others are progeny of International 500 and Service 500 companies. Sterling Chemicals was created from Monsanto's petrochemical manufacturing facilities. Diamond Shamrock R&M—the initials stand for refining and marketing—took its name from Maxus Energy, which used to be Diamond Shamrock. Borden Chemicals & Plastics comes from Borden, which is keeping its cow. Lorillard is a longtime subsidiary of the Service 500's Loews.

Other notable companies have left the 500. While FASB's consolidation rule made some behemoths loom even larger, it also changed the composition of many. ITT, for example, will move to FORTUNE's Service 500 list because the inclusion of its insurance and finance subsidiaries made it predominantly a service company. Other companies were similarly reclassified because they acquired service companies. General Cinema, for example, bought the Neiman Marcus Group. American Telephone &

THE BEST INVESTMENTS

THE TEN HIGHEST TOTAL RETURNS TO INVESTORS, 1988*

	SALES RANK	
MANVILLE	190	216.7%
MAXXAM	485	204.7
CHICAGO PACIFIC	250	162.0
PENNWALT	291	139.4
VALMONT INDUSTRIES	415	129.6
YORK HOLDINGS	290	121.4
HOLLY FARMS	243	113.5
RJR NABISCO	20	109.8
OHIO MATTRESS	417	107.4
UNIVERSAL FOODS	396	106.4

THE FIVE LOWEST

INTERCO	133	−65.6%
USG	152	−62.9
ANCHOR GLASS CONTAINER	340	−48.3
SEAGATE TECHNOLOGY	285	−42.0
ROBERTSON (H.H.)	494	−41.8
THE 500 MEDIAN		14.1

THE TEN HIGHEST TOTAL RETURNS TO INVESTORS, 1978–88 ANNUAL AVERAGE*

	SALES RANK	
HASBRO	273	54.3%
AFFILIATED PUBLICATIONS	477	47.0
MARION LABORATORIES	389	40.7
BERKSHIRE HATHAWAY	205	40.4
MACMILLAN	331	38.8
COOPER TIRE & RUBBER	391	38.3
TYSON FOODS	212	37.7
PHILIPS INDUSTRIES	405	37.6
TYCO LABORATORIES	239	36.5
OHIO MATTRESS	417	36.5

THE FIVE LOWEST

STORAGE TECHNOLOGY	362	−19.5%
ALLEGHENY INTERNATIONAL	341	−16.7
NAVISTAR INTERNATIONAL	113	−16.1
AM INTERNATIONAL	280	−13.3
LTV	56	−9.4
THE 500 MEDIAN		17.5

THE MOST PROFITABLE, 1988

THE TEN HIGHEST RETURNS ON STOCKHOLDERS' EQUITY

	SALES RANK	
STERLING CHEMICALS	403	235.3%
PENNZOIL	201	114.3
BEATRICE	57	108.2
CYCLOPS INDUSTRIES	289	82.6
LORILLARD	263	82.0
VISTA CHEMICAL	375	81.0
PENNWALT	291	79.1
BORG-WARNER	142	77.5
GEORGIA GULF	324	75.6
MAGNETEK	352	59.8
THE 500 MEDIAN		16.2

THE TEN HIGHEST RETURNS ON ASSETS

	SALES RANK	
STERLING CHEMICALS	403	72.4%
GEORGIA GULF	324	42.3
LORILLARD	263	39.6
PENNZOIL	201	32.9
ARISTECH CHEMICAL	321	27.8
UST	440	27.1
MARION LABORATORIES	389	27.1
REXENE	397	25.3
JOSTENS	450	21.8
VISTA CHEMICAL	375	21.7
THE 500 MEDIAN		6.8

THE TEN HIGHEST RETURNS ON SALES

	SALES RANK	
PENNZOIL	201	70.6%
STERLING CHEMICALS	403	30.5
UST	440	26.7
LORILLARD	263	26.1
WHEELING-PITTSBURGH STEEL	314	23.4
BORDEN CHEMICALS & PLASTICS	472	21.9
HIMONT	230	21.8
CRAY RESEARCH	385	20.7
MERCK	74	20.3
BERKSHIRE HATHAWAY	205	20.0
THE 500 MEDIAN		5.5

Telegraph will appear on the Service 500 simply because revenues from services (such as long-distance calling) outstripped sales of manufactured goods (such as private branch exchanges and telephones). Some private companies disappeared from the list because they decided to stop making their financial results public. BP America, a subsidiary of British Petroleum, was one of these.

A few FORTUNE 500 companies were devoured by other members of the clan. Philip Morris acquired Kraft, which ranked No. 31 last year. While this year's sales include only three weeks of Kraft's results—the official acquisition date was December 7, 1988—look for Philip Morris to be even plumper next year. Eastman Kodak, however, consolidated almost a year's results of Sterling Drug, which last year ranked No. 174. Kodak's sales increased 28%, to $17 billion.

As usual, companies in the list's bottom half set the pace for sales growth. M.A. Hanna, No. 500 a year ago, was this year's champ, leaping to No. 330 with a 122% increase. Hanna, a chemical manufacturer, built a new plant and enlarged six others. Sun Microsystems, only seven years old, continued to expand handsomely and nearly doubled sales last year by offering powerful computer workstations at ever lower prices. Loral, a defense electronics manufacturer, is no newcomer, yet its sales grew at an even sprightlier pace—up 109%.

Observes Loral's annual report: "Profit is not a dirty word." Of course the companies on the FORTUNE 500 have never believed otherwise. And never before have they expressed their agreement so emphatically.

– Reed Abelson and Rahul Jacob

THE MOST PRODUCTIVE, 1988

THE TEN HIGHEST IN SALES PER EMPLOYEE

	SALES RANK	
AG PROCESSING	351	$1,550,664
TOSCO	309	1,344,075
LOUISIANA LAND & EXPL.	395	1,162,258
NATIONAL COOP. REFINERY	448	1,056,036
PACIFIC RESOURCES	361	920,199
TEXACO	8	838,600
BORDEN CHEM. & PLASTICS	472	789,964
EXXON	3	787,693
GEORGIA GULF	324	775,868
ARCHER DANIELS MIDLAND	65	754,874

THE FIVE LOWEST

SEAGATE TECHNOLOGY	285	$42,199
SSMC	414	42,038
RUSSELL	480	41,987
MAXXAM	485	40,883
DIBRELL BROTHERS	470	22,561
THE 500 MEDIAN		137,888

THE TEN HIGHEST IN SALES PER DOLLAR OF STOCKHOLDERS' EQUITY

	SALES RANK	
IBC HOLDINGS	365	$76.92
AVERY	479	68.37
OWENS-ILLINOIS	129	62.23
INTERNATIONAL CONTROLS	401	53.53
CYCLOPS INDUSTRIES	289	36.12
MAGNETEK	352	32.78
AMERICAN STANDARD	123	26.49
BURLINGTON HOLDINGS	174	25.54
SMITHFIELD FOODS	348	23.37
MAXUS ENERGY	460	22.63

THE FIVE LOWEST

MITCHELL ENERGY	466	$1.00
PENN CENTRAL	248	.87
BURLINGTON RESOURCES	194	.72
BERKSHIRE HATHAWAY	205	.58
SEAGRAM (JOSEPH E.) & SONS	191	.52
THE 500 MEDIAN		2.93

AND NOW, TOGETHER FOR THE FIRST TIME . . .

The Financial Accounting Standards Board has issued a new rule: Henceforth, companies must consolidate results of all majority-owned subsidiaries with the results of their other operations. Reported assets of the auto companies, with their huge credit arms, have ballooned as a consequence—Ford's by nearly $100 billion. Revenue increases at the carmakers, GE, and Xerox, all with large finance subsidiaries, stem partly from the same rule. Another effect: ITT and Harcourt Brace Jovanovich will migrate to the Service 500. After consolidation, they have too much service revenue to be considered industrials.

THE FORTUNE

LARGEST U.S. INDUSTRIAL

1-50

RANK 1988	RANK 1987	COMPANY	SALES $ Millions	SALES % change from 1987	PROFITS $ Millions	PROFITS Rank	PROFITS % change from 1987	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank
1	1	**GENERAL MOTORS** Detroit	121,085.4	19.0	4,856.3	4	36.8	164,063.1	1	35,671.7	2
2	3	**FORD MOTOR** Dearborn, Mich.	92,445.6	29.0	5,300.2	2	14.6	143,366.5	2	21,529.0	4
3	2	**EXXON** New York	79,557.0*	4.1	5,260.0	3	8.7	74,293.0	4	31,767.0	3
4	4	**INT'L BUSINESS MACHINES** Armonk, N.Y.	59,681.0	10.1	5,806.0	1	10.4	73,037.0	5	39,509.0	1
5	6	**GENERAL ELECTRIC** Fairfield, Conn.[1]	49,414.0	25.7	3,386.0	5	16.2	110,865.0	3	18,466.0	5
6	5	**MOBIL** New York	48,198.0*	(5.9)	2,087.0	9	65.9	38,820.0	7	15,686.0	6
7	10	**CHRYSLER** Highland Park, Mich.	35,472.7	35.1	1,050.2	21	(18.6)	48,566.8	6	7,582.3	13
8	7	**TEXACO** White Plains, N.Y.	33,544.0*	(2.4)	1,304.0	17	–	26,337.0	14	8,105.0	11
9	9	**E.I. DU PONT DE NEMOURS** Wilmington, Del.	32,514.0*	6.7	2,190.0	8	22.6	30,719.0	10	15,580.0	7
10	12	**PHILIP MORRIS** New York[2]	25,860.0*	16.1	2,337.0	7	26.9	36,960.0	8	7,679.0	12
11	11	**CHEVRON** San Francisco	25,196.0*	(3.1)	1,768.0	11	75.6	33,968.0	9	14,788.0	9
12	14	**AMOCO** Chicago	21,150.0*	4.8	2,063.0	10	51.7	29,919.0	11	13,342.0	10
13	13	**SHELL OIL** Houston[3]	21,070.0*	1.0	1,239.0	18	0.7	27,169.0	12	15,381.0	8
14	16	**OCCIDENTAL PETROLEUM** Los Angeles	19,417.0	13.6	302.0	102	25.8	20,747.0	17	6,224.0	19
15	17	**PROCTER & GAMBLE** Cincinnati[4]	19,336.0	13.7	1,020.0	23	211.9	14,820.0	24	6,337.0	17
16	15	**UNITED TECHNOLOGIES** Hartford	18,087.8	5.3	659.1	42	11.4	12,748.3	25	4,823.4	26
17	18	**ATLANTIC RICHFIELD** Los Angeles	17,626.0*	8.3	1,583.0	12	29.3	21,514.0	16	6,247.0	18
18	25	**EASTMAN KODAK** Rochester, N.Y.[5]	17,034.0	28.0	1,397.0	14	18.6	22,964.0	15	6,720.0	16
19	20	**BOEING** Seattle	16,962.0	10.5	614.0	46	27.9	12,608.0	26	5,404.0	24
20	19	**RJR NABISCO** Atlanta	16,956.0	6.9	1,393.0	15	15.2	17,751.0	19	5,694.0	20
21	24	**DOW CHEMICAL** Midland, Mich.	16,682.0	24.7	2,398.0	6	93.4	16,239.0	22	7,255.0	15
22	34	**XEROX** Stamford, Conn.	16,441.0	59.3	388.0	74	(32.9)	26,441.0	13	5,667.0	22
23	23	**USX** Pittsburgh	15,792.0*	13.6	756.0	35	245.2	19,474.0	18	5,688.0	21
24	21	**TENNECO** Houston	15,707.0†	4.2	822.0	29	–	17,376.0	20	3,161.0	49
25	26	**MCDONNELL DOUGLAS** St. Louis	15,072.0	14.6	350.0	90	11.8	11,885.0	30	3,186.0	47
26	29	**PEPSICO** Purchase, N.Y.	13,007.0	13.1	762.2	33	28.1	11,135.3	32	3,161.0	48
27	33	**WESTINGHOUSE ELECTRIC** Pittsburgh	12,499.5	17.0	822.8	28	11.4	16,937.3	21	3,794.5	36
28	27	**ROCKWELL INTERNATIONAL** El Segundo, Calif.[6]	11,946.3	(1.5)	811.9	31	27.8	9,208.5	39	3,693.0	37
29	28	**ALLIED-SIGNAL** Morristown, N.J.	11,909.0	2.7	463.0	58	(29.4)	10,005.0	35	3,268.0	45
30	38	**DIGITAL EQUIPMENT** Maynard, Mass.[4]	11,475.4	22.2	1,305.6	16	14.8	10,111.6	34	7,510.4	14
31	32	**PHILLIPS PETROLEUM** Bartlesville, Okla.	11,304.0	5.[illegible]	650.0	43	1,757.1	11,968.0	29	2,113.0	71
32	35	**GOODYEAR TIRE & RUBBER** Akron	10,810.4	6.8	350.1	89	(54.6)	8,618.3	41	2,027.1	76
33	30	**LOCKHEED** Calabasas, Calif.	10,667.0	(6.2)	624.0	44	48.2	6,643.0	58	2,476.0	59
34	37	**MINNESOTA MINING & MFG.** St. Paul	10,581.0	12.2	1,154.0	20	25.7	8,922.0	40	5,514.0	23
35	48	**CATERPILLAR** Peoria, Ill.	10,435.0	27.6	616.0	45	76.0	9,686.0	36	4,113.0	32
36	40	**SARA LEE** Chicago[4]	10,423.8	13.9	325.1	95	21.7	5,012.1	82	1,800.1	86
37	58	**WEYERHAEUSER** Tacoma	10,004.2	43.1	564.4	49	26.4	15,387.1	23	4,044.8	33
38	36	**UNISYS** Blue Bell, Pa.	9,902.0	1.9	680.6	40	17.8	11,534.6	31	4,954.9	25
39	49	**HEWLETT-PACKARD** Palo Alto, Calif.[7]	9,831.0	21.5	816.0	30	26.7	7,497.0	48	4,533.0	29
40	51	**ALUMINUM CO. OF AMERICA** Pittsburgh	9,795.3	26.1	861.4	26	330.5	10,537.5	33	4,635.5	27
41	39	**GENERAL DYNAMICS** St. Louis	9,551.0	2.2	379.0	79	(13.3)	6,118.1	61	1,922.0	79
42	52	**INTERNATIONAL PAPER** Purchase, N.Y.	9,533.0	22.8	754.0	36	85.3	9,462.0	38	4,557.0	28
43	44	**GEORGIA-PACIFIC** Atlanta	9,509.0	10.5	467.0	57	2.0	7,115.0	51	2,635.0	56
44	41	**CONAGRA** Omaha[8]	9,475.0	5.3	154.7	167	4.0	3,042.9	134	814.4	183
45	50	**JOHNSON & JOHNSON** New Brunswick, N.J.	9,000.0	12.3	974.0	24	16.9	7,119.0	50	3,503.0	39
46	47	**ANHEUSER-BUSCH** St. Louis	8,924.1*	8.1	715.9	39	16.5	7,109.8	52	3,102.9	51
47	46	**UNOCAL** Los Angeles	8,853.0*	4.6	480.0	55	165.2	9,508.0	37	2,161.0	68
48	43	**SUN** Radnor, Pa.	8,612.0*	(0.9)	7.0	422	(98.0)	8,616.0	42	3,325.0	44
49	54	**COCA-COLA** Atlanta	8,337.8	8.9	1,044.7	22	14.0	7,450.6	49	3,345.3	42
50	59	**UNION CARBIDE** Danbury, Conn.	8,324.0	20.4	662.0	41	185.3	8,441.0	45	1,836.0	83

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				RANK	
		SALES		ASSETS		STOCKHOLDERS' EQUITY				1978-88 annual growth rate		1988		1978-88 annual average		INDUSTRY TABLE NUMBER	
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$	% change from 1987	%	Rank	%	Rank	%	Rank		1988
25,773.8	5	4.0	299	3.0	382	13.6	286	7.17	42.5	1.6	291	45.1	61	11.6	287	17	1
24,552.8	7	5.7	210	3.7	357	24.6	65	10.96	21.1	14.0	89	40.4	70	24.3	74	17	2
57,130.1	2	6.6	167	7.1	204	16.6	213	3.95	15.2	9.8	166	21.1	166	22.1	99	18	3
70,056.6	1	9.7	87	7.9	171	14.7	256	9.80	12.4	6.3	222	9.8	249	9.8	311	6	4
40,595.2	3	6.9	157	3.1	379	18.3	172	3.75	17.2	10.8	150	4.8	297	19.0	151	7	5
19,971.7	10	4.3	283	5.4	284	13.3	292	5.07	65.7	6.7	215	22.5	157	17.4	191	18	6
6,269.1	45	3.0	353	2.2	394	13.9	279	4.66	(21.0)	–		21.3	164	23.1	87	17	7
12,771.2	23	3.9	308	5.0	315	16.1	221	5.35	–	5.5	239	43.6	64	16.1	214	18	8
23,491.1	8	6.7	160	7.1	202	14.1	272	9.11	23.3	5.4	243	5.5	288	13.7	254	5	9
26,911.5	4	9.0	102	6.3	238	30.4	40	10.03	29.4	19.5	32	24.4	142	24.1	78	25	10
17,704.2	12	7.0	153	5.2	296	12.0	317	5.17	75.9	4.8	248	21.9	160	13.3	260	18	11
20,811.9	9	9.8	86	6.9	213	15.5	239	4.00	50.7	8.1	188	13.8	217	16.2	211	18	12
N.A.		5.9	198	4.6	330	8.1	366	N.A.	–	–		–		–		18	13
7,134.4	34	1.6	403	1.5	413	4.7§	398	1.21	14.2	–		14.6	206	14.3	243	8	14
14,904.2	18	5.3	227	6.9	215	16.1	218	5.96	218.7	6.8	211	5.6	286	11.6	288	23	15
5,802.7	50	3.6	315	5.2	302	13.7	283	5.05	11.7	6.4	220	26.3	126	12.4	275	1	16
15,412.5	15	9.0	105	7.4	195	25.3	59	8.78	31.4	10.3	156	22.8	152	17.1	198	18	17
14,913.2	17	8.2	123	6.1	254	20.6	123	4.31	19.1	5.7	234	(4.1)	354	10.7	300	22	18
10,192.3	29	3.6	317	4.9	318	11.4	326	4.02	29.7	6.0	231	68.4	31	15.2	229	1	19
19,459.6	11	8.2	122	7.8	176	24.2§	69	5.92	26.0	12.6	109	109.8	8	30.1	26	8	20
17,206.2	14	14.4	36	14.8	40	23.1	30	12.76	97.2	15.0	74	0.4	330	19.2	146	5	21
6,379.8	41	2.4	374	1.5	412	6.8	373	3.50	(34.6)	(5.1)	329	8.8	260	7.0	335	22	22
8,126.9	31	4.8	257	3.9	352	13.1§	296	2.62	385.2	(0.8)	307	2.5	321	9.1	318	18	23
6,040.6	47	5.2	229	4.7	324	25.2§	61	5.48	–	1.9	284	31.2	109	12.6	269	11	24
3,437.1	88	2.3	375	2.9	383¹	11.0	333	9.13	17.8	8.2	185	31.5	107	11.7	285	1	25
10,775.3	28	5.9	201	6.8	216	24.1	71	2.90	28.3	13.6	97	20.8	167	20.7	127	3	26
7,720.2	32	6.6	168	4.9	319	21.7	106	5.66	10.5	15.0	76	9.8	248	25.7	64	7	27
5,590.8	51	6.8	158	8.8	143	22.0	102	3.04	33.9	17.1	51	18.6	182	21.8	103	1	28
5,012.2	62	3.9	307	4.6	328	14.2	268	3.10	(20.5)	0.9	293	21.4	163	12.0	280	1	29
14,002.4	20	11.4	61	12.9	56	17.4	188	9.90	16.1	19.3	33	(27.1)	418	13.9	253	6	30
5,503.6	53	5.8	209	5.4	282	30.2§	42	2.72	4,433.3	5.9	232	44.7	62	13.2	261	18	31
2,765.3	110	3.2	339	4.1	347	17.3	192	6.11	(52.0)	7.0	209	(12.3)	386	18.8	158	21	32
2,855.6	106	5.8	202	9.4	123	25.2	62	10.37	61.8	22.1	21	24.5	140	21.6	107	1	33
15,086.4	16	10.9	66	12.9	55	20.9	117	5.09	26.6	7.7	194	(0.4)	333	11.6	286	22	34
5,907.4	49	5.9	196	6.4	233	15.0	250	6.07	72.9	(0.8)	305	3.9	307	3.8	350	11	35
5,248.5	59	3.1	343	6.5	230	18.1	179	2.83	20.4	13.4	100	22.9	151	27.8	40	8	36
5,295.0	58	5.6	215	3.7	360	14.0	275	2.68	26.4	3.5	271	1.8	325	8.6	323	9	37
4,399.9	73	6.9	156	5.9	266	13.7	281	3.58	13.7	5.6	236	(13.8)	389	6.1	343	6	38
12,567.0	24	8.3	121	10.9	83	18.0	180	3.36	34.4	17.7	48	(8.1)	370	17.5	188	6	39
5,426.6	54	8.8	108	8.2	163	18.6	166	9.74	332.9	8.1	186	23.0	150	13.4	259	15	40
2,199.5	134	4.0	302	6.2	245	19.7	138	9.03	(12.0)	–		6.1	280	14.6	239	1	41
5,136.5	60	7.9	130	8.0	170	16.1§	222	6.57	78.5	10.3	157	12.9	228	14.9	234	9	42
4,018.3	82	4.9	246	6.6	226	17.7	184	4.76	12.5	5.0	246	10.5	245	8.2	324	9	43
2,575.9	115	1.6	401	5.1	308	18.9§	159	1.94	4.9	16.0	59	17.1	189	32.9	19	8	44
14,577.5	19	10.8	67	13.7	49	27.8	49	5.72	18.4	13.1	101	16.3	194	16.2	212	19	45
11,047.1	27	8.0	126	10.1	100	23.1	85	2.45	20.1	19.6	31	(3.6)	352	26.3	59	3	46
4,961.7	64	5.4	220	5.0	312	22.2	99	4.12	164.1	6.5	218	37.9	76	14.1	249	18	47
3,844.7	84	0.1	433	0.1	433	0.2	419	0.06	(98.1)	(33.2)	348	(3.2)	348	14.2	246	18	48
17,296.0	13	12.5	47	14.0	47	31.2	37	2.85	17.3	10.9	145	22.6	155	17.5	187	3	49
4,296.2	76	8.0	127	7.8	177	36.1	24	4.83	177.3	9.2	175	24.1	144	19.6	141	5	50

THE FORTUNE

LARGEST U.S. INDUSTRIAL

51-100

RANK		COMPANY	SALES		PROFITS			ASSETS		STOCKHOLDERS' EQUITY	
1988	1987		$ Millions	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank	$ Millions	Rank
51	55	**MONSANTO** St. Louis	8,293.0	8.6	591.0	47	35.5	8,461.0	44	3,800.0	35
52	62	**MOTOROLA** Schaumburg, Ill.	8,250.0	23.0	445.0	61	44.5	6,710.0	56	3,375.0	41
53	53	**RAYTHEON** Lexington, Mass.	8,192.1	7.0	489.8	52	10.0	4,739.5	88	2,121.0	70
54	57	**COASTAL** Houston	8,186.5	10.4	157.4	163	39.2	7,865.3	46	1,271.9	127
55	60	**ASHLAND OIL** Russell, Ky.[6]	7,753.1	12.8	222.9	130	67.8	4,254.5	102	1,121.0	144
56	56	**LTV** Dallas	7,525.7	(0.7)	(3,153.6)	477	(727.5)	6,163.0	59	(5,183.4)	487
57	42	**BEATRICE** Chicago[9]	7,505.0¶	(15.9)	529.0	50	–	5,711.0	63	489.0	253
58	65	**AMERICAN BRANDS** Old Greenwich, Conn.	7,476.9*	18.2	580.0	48	11.0	12,200.6	28	2,523.2	58
59	64	**BORDEN** New York	7,243.5	11.2	311.9	99	16.8	4.440.3	97	1,848.6	82
60	63	**HONEYWELL** Minneapolis	7,148.3	7.0	(434.9)	474	(271.4)	5,089.1	77	1,731.3	92
61	72	**TEXTRON** Providence	7,111.2	25.6	234.4‡	122	(8.5)	12,554.1	27	2,384.9	62
62	61	**TRW** Cleveland	6,982.0	2.4	281.0	115	7.2	4,442.0	96	1,566.0	103
63	•	**UNILEVER U.S.** New York[10]	6,955.7	29.9	133.2	183	86.5	6,712.2	55	2,013.9	77
64	66	**BAXTER INTERNATIONAL** Deerfield, Ill.[11]	6,861.0	10.3	388.0	75	17.2	8,550.0	43	3,976.0	34
65	71	**ARCHER DANIELS MIDLAND** Decatur, Ill.[6]	6,798.4	17.7	353.1	87	33.1	4,397.6	99	2,630.5	57
66	67	**EMERSON ELECTRIC** St. Louis[6]	6,651.5	7.8	528.8	51	13.2	5,027.0	80	2,820.1	55
67	115	**HANSON INDUSTRIES NA** Iselin, N.J.[6,12]	6,494.3	72.3	300.3	103	31.1	5,771.6	62	N.A.	
68	75	**TEXAS INSTRUMENTS** Dallas	6,294.8	12.5	366.3	83	18.7	4,427.5	98	2,243.6	63
69	81	**W.R. GRACE** New York	6,199.2	22.8	233.6	123	35.0	5,310.3	68	1,551.1	107
70	68	**PILLSBURY** Minneapolis[8,13]	6,190.6	1.0	69.3	267	(61.9)	3,840.0	106	1,338.0	120
71	70	**RALSTON PURINA** St. Louis[6]	6,175.8	5.2	387.8	76	(25.9)	4,044.4	104	1,089.9	147
72	74	**NCR** Dayton	5,989.9	6.2	439.3	62	4.8	4,717.3	89	2,240.2	65
73	76	**BRISTOL-MYERS** New York	5,972.5	10.6	829.0	27	16.8	5,189.7	72	3,547.0	38
74	80	**MERCK** Rahway, N.J.	5,939.5	17.4	1,206.8	19	33.1	6,127.5	60	2,855.3	54
75	49	**NORTHROP** Los Angeles	5,797.1	(4.2)	104.2	210	10.6	3,139.2	130	1,003.6	159
76	77	**GENERAL MILLS** Minneapolis[8]	5,777.7¶	10.9	283.1	110	27.5	2,671.9	154	648.5	214
77	79	**MARTIN MARIETTA** Bethesda, Md.	5,727.5	10.9	358.9**	85	55.6	3,319.0	126	1,200.6	133
78	91	**HOECHST CELANESE** Bridgewater, N.J.[14]	5,679.0	23.6	250.0	119	47.9	5,703.0	64	3,161.0	50
79	78	**PPG INDUSTRIES** Pittsburgh	5,616.7	8.4	467.6	56	24.0	5,154.1	75	2,243.4	64
80	101	**REYNOLDS METALS** Richmond	5,567.1	30.0	482.0	53	119.6	5,031.7	79	2,040.1	75
81	82	**AMERICAN HOME PRODUCTS** New York	5,500.5	9.4	932.2	25	10.3	4,610.7	91	2,975.7	53
82	89	**BETHLEHEM STEEL** Bethlehem, Pa.	5,488.8	18.8	403.0	68	131.2	4,448.5	95	1,790.8	88
83	73	**COLGATE-PALMOLIVE** New York	5,484.3¶	(2.9)	317.8	97	488.3	3,217.6	128	1,150.6	140
84	86	**NORTH AMERICAN PHILIPS** New York[15]	5,423.5	11.9	79.1	251	–	3,430.7	120	1,582.7	101
85	85	**KIMBERLY-CLARK** Dallas	5,393.5	10.4	378.6	80	16.4	4,267.6	101	1,865.6	81
86	83	**PFIZER** New York	5,385.4	9.5	791.3	32	14.6	7,637.6	47	4,301.1	30
87	108	**DEERE** Moline, Ill.[7]	5,364.8	29.8	315.4	98	–	5,245.3	71	2,456.2	61
88	93	**QUAKER OATS** Chicago[6]	5,329.8	17.4	255.7	117	4.8	2,974.6	138	1,251.1	130
89	88	**H.J. HEINZ** Pittsburgh[16]	5,244.2	13.0	386.0	77	14.0	3,605.1	115	1,593.9	98
90	107	**DANA** Toledo	5,171.7	24.9	162.2	157	12.3	4,786.4	87	959.6	167
91	90	**CHAMPION INTERNATIONAL** Stamford, Conn.	5,128.5	11.1	456.4	59	19.5	6,699.9	57	3,345.0	43
92	95	**JAMES RIVER** Richmond[16]	5,098.0	13.8	209.0	138	23.0	5,005.7	83	2,177.5	67
93	99	**BASF** Parsippany, N.J.[17]	5,000.0	15.4	149.2	172	14.2	2,956.0	139	1,148.0	141
94	97	**ABBOTT LABORATORIES** Abbott Park, Ill.	4,937.0	12.5	752.0	37	18.9	4,825.1	85	2,464.6	60
95	94	**CAMPBELL SOUP** Camden, N.J.[18]	4,868.9	8.4	274.1	111	10.8	3,609.6	114	1,895.0	80
96	96	**LITTON INDUSTRIES** Beverly Hills[18]	4,863.9	10.1	167.0	154	20.9	5,074.5	78	1,175.4	136
97	100	**SMITHKLINE BECKMAN** Philadelphia	4,749.0	9.7	229.2	127	(59.8)	5,016.8	81	1,546.7	108
98	109	**SCOTT PAPER** Philadelphia	4,726.4	14.7	400.9	69	71.5	5,156.3	74	1,951.9	78
99	103	**BAYER USA** Pittsburgh[19]	4,718.5	12.4	124.4	192	1.0	3,626.9	112	1,420.1	115
100	84	**CPC INTERNATIONAL** Englewood Cliffs, N.J.	4,700.0	(4.1)	289.1	108	(18.5)	3,342.0	124	1,194.5	134

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS					RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1987	1978-88 annual growth rate		1988		1978-88 annual average		INDUSTRY TABLE NUMBER	
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$		%	Rank	%	Rank	%	Rank		1988
6,296.9	43	7.1	149	7.0	211	15.6	237	8.27	46.9	7.2	205	2.1	323	19.0	152	5	51
5,524.2	52	5.4	224	6.6	225	13.2	294	3.43	43.5	9.8	167	(14.4)	393	14.4	242	7	52
4,505.1	72	6.0	193	10.3	95	23.1	84	7.35	20.1	11.8	126	3.5	312	14.5	240	7	53
2,076.7	140	1.9	391	2.0	398	11.7§	321	2.70	29.6	7.6	200	33.6	94	20.9	122	18	54
2,265.9	129	2.9	356	5.3	289	20.0	133	4.01	87.8	3.8	264	19.4	176	12.9	264	18	55
235.6	389	(41.9)	475	(51.2)	473	–		(30.94)	(829.7)	–		(10.0)	378	(9.4)	373	15	56
N.A.		7.0	151	9.3	131	108.2	3	3.95	–	–		–		–		8	57
6,234.4	46	7.8	134	4.8	323	22.5§	94	5.84	27.0	11.4	138	54.3	44	26.0	63	25	58
4,275.6	77	4.3	286	7.0	209	16.9	203	4.22	16.6	11.2	140	23.1	149	27.4	43	8	59
2,726.1	111	(6.1)	465	(8.5)	464	(25.1)	440	(10.22)	(277.7)	–		14.5	209	9.1	319	7	60
2,410.6	123	3.3	336	1.9	404	9.8	349	2.67‡	(11.6)	1.8	287	9.3	251	12.3	276	1	61
2,687.7	112	3.7	312	5.9	268	16.7	210	4.29	7.0	4.7	252	(9.4)	374	13.2	262	7	62
N.A.		1.9	392	2.0	399	6.6	377	N.A.	–	–		–		–		23	63
4,741.3	68	5.7	212	4.5	331	9.8	352	1.31	14.9	6.8	210	(20.7)	408	7.3	331	22	64
4,204.6	78	5.2	230	8.0	167	13.4	289	1.95	33.0	15.9	63	3.7	309	18.5	142	8	65
6,760.9	37	8.0	128	10.5	92	18.8	161	2.31	15.5	9.0	178	(9.3)	373	14.0	250	7	66
N.A.		4.6	262	5.2	297	–		N.A.	–	–		–		–		5	67
3,185.5	94	5.8	205	8.3	161	16.3	216	4.05	12.8	7.0	207	(25.2)	417	6.3	341	7	68
2,441.4	119	3.8	311	4.4	336	15.1	249	2.75	35.5	2.7	280	14.2	212	13.6	255	5	69
N.A.		1.1	415	1.8	406	5.2	393	0.81	(61.4)	(2.4)	320	92.8	14	26.5	53	8	70
4,966.8	63	6.3	175	9.6	113	35.6	26	5.63	(22.1)	14.6	80	30.7	110	26.4	56	8	71
4,575.5	71	7.3	140	9.3	128	19.6	144	5.33	18.2	6.0	229	(13.9)	390	16.5	208	6	72
13,128.4	22	13.9	38	16.0	30	23.4	79	2.88	16.6	14.1	87	13.0	226	21.7	106	19	73
25,441.0	6	20.3	9	19.7	15	42.3	19	3.05	37.0	16.2	57	11.9	237	21.1	118	19	74
1,360.0	191	1.8	396	3.3	372	10.4	340	2.22	10.4	0.7	295	13.3	221	12.5	272	1	75
4,685.4	69	4.9	247	10.6	89	43.7	16	3.25	30.0	9.1	176	8.3	264	19.4	143	8	76
2,370.3	125	6.3	177	10.8	84	29.9	43	6.75**	58.8	15.2	70	(1.1)	337	20.8	124	1	77
N.A.		4.4	275	4.4	337	7.9	368	N.A.	–	–		–		–		5	78
5,054.9	61	8.3	118	9.1	136	20.8	120	4.26	33.5	15.1	73	25.9	130	26.6	50	5	79
2,963.8	104	8.7	113	9.6	115	23.6	77	9.01	108.1	11.4	137	15.3	204	17.6	185	15	80
12,555.2	25	16.9	20	20.2	11	31.3	36	6.38	11.3	11.2	142	19.8	173	17.2	196	19	81
1,855.4	155	7.3	139	9.1	137	22.5	92	5.32	92.1	0.3	299	38.8	74	5.3	348	15	82
3,188.0	93	5.8	207	9.9	104	27.6	51	4.64	494.9	8.0	191	24.2	143	17.2	197	23	83
N.A.		1.5	407	2.3	392	5.0	396	N.A.	–	–		–		–		7	84
4,900.4	65	7.0	152	8.9	141	20.3	130	4.71	26.3	11.5	136	19.8	172	24.9	70	9	85
9,055.4	30	14.7	31	10.4	94	18.4	170	4.70	15.2	12.4	115	29.0	118	17.1	199	19	86
3,665.5	85	5.9	199	6.0	261	12.8	303	4.48	–	0.2	300	40.1	71	7.1	333	11	87
4,078.8	80	4.8	255	8.6	154	20.4	127	3.20	3.2	14.4	84	30.5	111	29.6	29	8	88
6,276.5	44	7.4	138	10.7	87	24.2	67	2.91	17.8	15.2	71	19.3	178	26.4	55	8	89
1,581.8	168	3.1	342	3.4	369	16.9	201	3.99	20.9	3.6	270	18.7	181	12.4	274	17	90
3,028.8	98	8.9	107	6.8	219	13.6	284	4.80	19.1	3.8	267	(4.4)	356	7.9	327	9	91
2,370.9	124	4.1	298	4.2	343	9.6§	355	2.36	16.3	16.5	56	22.7	154	22.2	98	9	92
N.A.		3.0	351	5.0	313	13.0	299	N.A.	–	–		–		–		5	93
11,692.0	26	15.2	28	15.6	33	30.5	39	3.33	19.8	18.3	44	2.3	322	21.9	102	19	94
4,189.3	79	5.6	216	7.6	187	14.5	261	2.12	11.3	8.9	181	16.4	192	19.1	148	8	95
1,928.6	149	3.4	326	3.3	374	14.2	267	6.33	22.7	–		(0.3)	332	16.8	204	22	96
6,489.4	40	4.8	253	4.6	329	14.8	255	1.84	(59.1)	3.0	275	2.8	316	11.7	284	19	97
3,059.5	97	8.5	116	7.8	183	20.5	125	5.23	71.2	15.8	65	13.6	219	23.7	82	9	98
N.A.		2.6	362	3.4	368	8.8	359	N.A.	–	–		–		–		5	99
4,025.0	81	6.2	185	8.7	152	24.2	68	3.68	(15.2)	9.0	177	32.1	101	21.1	117	8	100

RANK		COMPANY	SALES		PROFITS			ASSETS		STOCKHOLDERS' EQUITY	
1988	1987		$ Millions	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank	$ Millions	Rank
101	106	**AMERICAN CYANAMID** Wayne, N.J.	4,592.0	10.2	305.6	101	10.9	4,593.1	93	2,062.0	73
102	104	**TIME INC.** New York	4,506.9	7.5	289.3	106	15.8	4,913.2	84	1,359.0	117
103	102	**MEAD** Dayton	4,463.9	6.1	352.7	88	62.0	3,540.5	117	1,567.5	102
104	105	**WHIRLPOOL** Benton Harbor, Mich.	4,421.4	5.8	94.1	228	(51.0)	3,409.7	122	1,320.9	122
105	134	**TELEDYNE** Los Angeles	4,400.6	36.8	391.8	72	3.9	5,125.3	76	2,138.4	69
106	114	**KELLOGG** Battle Creek, Mich.	4,348.9	14.7	480.4	54	21.3	3,306.7	127	1,483.2	113
107	118	**COOPER INDUSTRIES** Houston	4,258.3	18.8	224.4	129	29.1	4,384.0	100	1,771.7	90
108	110	**EATON** Cleveland	4,236.9¶	4.5	212.3	135	5.5	3,033.8	135	1,158.6	131
109	•	**WARNER COMMUNICATIONS** New York	4,206.1	23.6	423.2	64	29.0	4,598.0	92	1,791.2	87
110	87	**AMERADA HESS** New York	4,206.0	(12.1)	124.2	193	(46.0)	5,372.0	67	2,215.2	66
111	98	**TRIANGLE INDUSTRIES** New York[20]	4,103.8	(5.4)	(54.3)	459	(203.9)	5,466.5	66	286.1	336
112	113	**BOISE CASCADE** Boise, Idaho	4,094.6	7.2	289.1	107	58.0	3,610.2	113	1,677.6	95
113	120	**NAVISTAR INTERNATIONAL** Chicago[7]	4,080.2	15.6	244.0	120	630.5	2,522.2	159	865.8	175
114	152	**APPLE COMPUTER** Cupertino, Calif.[6]	4,071.4	53.0	400.3	70	84.0	2,082.1	182	1,003.4	160
115	111	**ELI LILLY** Indianapolis	4,069.7	0.5	761.0	34	18.2	5,262.7	69	3,225.3	46
116	122	**INLAND STEEL INDUSTRIES** Chicago	4,068.0	17.8	262.1	114	80.8	2,925.0	141	1,559.4	105
117	124	**AMAX** New York	3,944.0	14.8	740.9	38	1,347.1	4,076.0	103	1,707.7	93
118	138	**DRESSER INDUSTRIES** Dallas[7]	3,941.7	26.3	156.8	164	220.7	2,899.4	143	1,504.7	112
119	92	**WHITMAN** Chicago[21]	3,914.6	(14.6)	233.5	124	(7.2)	3,485.8	118	868.0	174
120	121	**WARNER-LAMBERT** Morris Plains, N.J.	3,908.4	12.2	340.3	93	15.0	2,702.8	153	998.6	161
121	126	**COCA-COLA ENTERPRISES** Atlanta	3,874.4	16.4	152.6	168	72.7	4,669.2	90	1,808.4	85
122	133	**STONE CONTAINER** Chicago	3,742.5	15.8	341.8	91	111.9	2,395.0	166	1,063.6	150
123	123	**AMERICAN STANDARD** New York	3,716.2	8.1	(26.3)	453	(120.7)	3,662.4	110	140.3	413
124	132	**AGWAY** DeWitt, N.Y.[4]	3,643.9¶	11.6	N.A.		–	1,496.8	225	233.2	365
125	125	**CONTROL DATA** Minneapolis	3,628.3	7.8	1.7	431	(91.2)	2,533.5	158	1,054.2	152
126	127	**GRUMMAN** Bethpage, N.Y.	3,591.3	8.0	86.5	242	142.5	2,566.0	156	782.3	187
127	157	**GREAT NORTHERN NEKOOSA** Norwalk, Conn.	3,588.1	38.6	341.7	92	70.3	3,821.4	107	1,532.9	110
128	135	**GILLETTE** Boston	3,581.2	13.1	268.5	113	16.8	2,867.9	146	(84.6)	476
129	116	**OWENS-ILLINOIS** Toledo[22]	3,571.9	(3.8)	(59.0)	462	–	5,178.7	73	57.4	458
130	131	**UNITED BRANDS** Cincinnati	3,503.2	7.2	60.4	284	1.7	1,435.5	226	400.8	278
131	128	**COMBUSTION ENGINEERING** Stamford, Conn.	3,483.9	5.5	(245.2)	472	(533.5)	2,545.8	157	593.2	229
132	129	**AVON PRODUCTS** New York	3,364.5	2.2	(404.5)	473	(354.2)	2,460.4	162	239.3	361
133	155	**INTERCO** St. Louis[9]	3,341.4	27.8	145.0	176	47.0	1,985.6	188	1,251.3	129
134	141	**GANNETT** Arlington, Va.	3,314.5	7.6	364.5	84	14.1	3,792.8	108	1,786.4	89
135	148	**CUMMINS ENGINE** Columbus, Ind.	3.310.1	19.6	(63.4)	463	(556.9)	2,064.0	186	701.5	202
136	137	**FMC** Chicago	3,286.9	4.7	129.2	187	(28.4)	2,748.8	152	(223.6)	479
137	140	**BRUNSWICK** Skokie, Ill.	3,282.0	6.3	193.1	145	14.4	2,092.0	181	949.8	168
138	136	**TIMES MIRROR** Los Angeles	3,259.4	3.3	331.9	94	24.5	3,475.6	119	1,686.9	94
139	154	**QUANTUM CHEMICAL** New York	3,235.3¶	22.4	382.7	78	52.1	2,907.7	142	(407.0)	482
140	143	**ARMCO** Parsippany, N.J.	3,227.3	10.3	145.4	174	23.6	2,788.2	150	890.4	171
141	117	**SIPCO** Greeley, Colo.[7,38]	3,225.4	(12.6)	10.6	415	–	361.7	451	(.01)	470
142	119	**BORG-WARNER** Chicago	3,217.7¶	(9.5)	419.3	66	–	2,668.1	155	541.2	240
143	166	**PACCAR** Bellevue, Wash.	3,112.2	28.4	175.8	150	56.3	2,831.5	149	904.2	170
144	151	**JOHNSON CONTROLS** Milwaukee[6]	3,099.6	15.8	103.5	211	15.5	2,013.3	187	852.5	177
145	146	**WANG LABORATORIES** Lowell, Mass.[4]	3,068.4	8.2	92.7	231	–	2,838.0	147	1,586.1	100
146	153	**INGERSOLL-RAND** Woodcliff Lake, N.J.	3,021.4	14.1	161.6	160	37.3	2,483.2	161	1,342.8	119
147	149	**SCHERING-PLOUGH** Madison, N.J.	2,969.4	10.0	389.8	73	23.2	3,425.6	121	1,677.0	96
148	•	**HENLEY GROUP** Hampton, N.H.	2,903.0	(17.4)	(47.0)	458	–	2,833.0	148	1,589.0	99
149	162	**R.R. DONNELLEY & SONS** Chicago	2,878.4	15.9	205.3	140	(5.9)	2,346.3	171	1,296.4	124
150	200	**INTEL** Santa Clara, Calif.	2,874.8	50.7	452.9	60	82.6	3,549.7	116	2,080.1	72

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS					RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY				1978-88 annual growth rate		1988		1978-88 annual average		INDUSTRY TABLE NUMBER	
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$	% change from 1987	%	Rank	%	Rank	%	Rank		1988
4,388.6	74	6.7	166	6.7	223	14.8	254	3.41	12.9	7.7	199	16.0	197	18.7	159	5	101
6,549.5	39	6.4	172	5.9	267	21.3	112	5.01	19.8	5.7	235	31.5	106	22.4	96	20	102
2,415.5	121	7.9	131	10.0	103	22.5	93	5.37	55.7	7.7	196	17.3	188	18.1	172	9	103
1,845.0	157	2.1	384	2.8	388	7.1	372	1.36	(49.3)	(0.1)	303	5.9	283	15.4	224	7	104
3,933.3	83	8.9	106	7.6	185	18.3	174	34.03	5.5	13.7	93	10.6	243	22.6	95	7	105
7,380.0	33	11.0	63	14.5	42	32.4	31	3.90	21.9	15.2	72	26.0	128	27.4	44	8	106
2,806.9	107	5.3	228	5.1	307	12.7	305	2.21	27.4	4.1	259	0.4	328	12.2	278	7	107
2,184.3	135	5.0	243	7.0	210	18.3	173	5.69	19.2	5.5	240	9.1	255	18.1	171	17	108
7,119.7	35	10.1	79	9.2	133	23.6	76	2.65	28.0	11.9	123	34.7	87	18.8	156	7	109
2,982.0	101	3.0	354	2.3	391	5.6	391	1.51	(44.7)	(1.2)	310	29.5	117	12.2	277	18	110
N.A.		(1.3)	447	(1.0)	443	(19.0)	438	N.A.	–	–		–		–		14	111
1,886.7	153	7.1	150	8.0	168	17.2	193	6.34	71.4	8.0	192	4.0	306	14.8	237	9	112
1,580.4	169	6.0	192	9.7	110	28.2	48	0.84	2,700.0	(18.0)	347	26.5	125	(16.1)	375	17	113
4,296.9	75	9.8	83	19.2	17	39.9	22	3.08	86.7	–		(3.4)	349	–		6	114
12,575.0	27	18.7	15	14.5	43	23.6	78	5.33	20.9	10.8	146	12.7	231	17.9	180	19	115
1,538.3	172	6.4	170	9.0	138	16.8	206	7.39	78.5	(0.3)	304	39.5	72	5.4	347	15	116
2,070.9	142	18.8	14	18.2	22	43.3§	17	8.42	1,488.7	11.8	125	14.2	213	(1.5)	365	15	117
2,472.4	117	4.0	301	5.4	283	10.4	239	2.27	249.2	(1.4)	311	14.3	211	7.8	328	11	118
3,331.2	91	6.0	194	6.7	221	26.9	[illegible]	2.19	(1.8)	5.3	245	19.4	175	26.6	51	8	119
5,415.2	57	8.7	112	12.6	63	34.1	[illegible]	5.00	20.5	6.7	214	19.6	174	18.0	174	19	120
2,109.5	138	3.9	304	3.3	375	8.4	362	1.03	63.5	–		5.6	285	–		3	121
1,888.7	151	9.1	99	14.3	45	32.1	32	5.69	102.5	–		32.1	100	35.1	13	9	122
N.A.		(0.7)	437	(0.7)	440	(18.8)	437	N.A.	–	–		–		–		4	123
N.A.		–		–		–		N.A.	–	–		–		–		8	124
898.5	256	0.0	434	0.1	434	0.2	420	0.03	(93.3)	(36.0)	349	(9.2)	372	2.4	354	6	125
703.2	282	2.4	371	3.4	370	10.4§	338	2.50	166.0	7.5	202	20.3	170	14.9	233	1	126
2,208.4	133	9.5	91	8.9	139	22.3	97	6.21	68.8	16.0	61	(14.8)	394	19.0	150	9	127
3,429.9	89	7.5	136	9.4	126	–		2.45	22.5	4.6	120	25.4	136	24.1	77	14	128
N.A.		(1.7)	452	(1.1)	446	(102.8)	448	N.A.	–	–		–		–		4	129
574.4	311	1.7	398	4.2	341	15.1	248	1.47	14.2	9.4	173	9.0	256	19.1	149	8	130
1,070.6	220	(7.0)	467	(9.6)	466	(41.3)	443	(6.40)	(515.6)	–		(3.6)	350	10.3	307	14	131
1,232.5	203	(12.0)	469	(16.4)	469	(169.0)	451	(6.79)	(400.4)	–		(19.2)	406	(1.9)	366	23	132
122.1	420	4.3	281	7.3	197	11.6	323	3.50	11.8	2.1	283	(65.6)	429	(0.3)	361	10	133
5,959.2	48	11.0	65	9.6	112	20.4	128	2.26	14.1	12.6	110	(6.3)	365	18.5	162	20	134
668.9	290	(1.9)	453	(3.1)	455	(9.0)	431	(6.71)	(1,320.0)	–		41.8	69	11.3	295	11	135
1,252.6	199	3.9	305	4.7	326	–		3.60	(16.1)	(1.6)	312	(5.2)	359	25.2	66	5	136
1,467.6	179	5.9	197	9.2	132	20.3	129	2.20	15.8	22.6	19	16.8	190	31.3	21	27	137
4,597.6	70	10.2	77	9.5	116	19.7	140	2.58	25.2	9.6	170	(5.8)	362	19.7	139	20	138
1,337.6	193	11.8	53	13.2	54	–		14.57	88.0	15.9	62	49.9	53	27.5	42	5	139
965.8	243	4.5	269	5.2	295	16.3	215	1.57	13.8	(9.6)	337	(11.1)	381	(3.9)	368	15	140
N.A.		0.3	427	2.9	384	–		5,693.00	–	–		–		–		8	141
N.A.		13.0	42	15.7	32	77.5	8	N.A.	–	–		–		–		17	142
1,619.6	167	5.6	214	6.2	243	19.4	147	4.90	56.5	7.4	204	51.0	51	26.5	54	17	143
1,301.6	195	3.3	332	5.1	303	12.1	312	2.83	28.6	5.4	241	47.9	58	15.8	218	21	144
1,529.3	174	3.0	349	3.3	376	5.8	388	0.56	–	12.5	112	(22.8)	413	8.9	321	6	145
1,996.7	145	5.3	225	6.5	229	12.0	313	3.00	38.2	1.2	292	(0.8)	336	11.4	293	11	146
7,001.3	36	13.1	41	11.4	75	23.2	81	3.48	27.5	6.8	213	24.1	145	18.8	157	19	147
1,531.7	173	(1.6)	450	(1.7)	450	(3.0)	426	(2.55)	–	–		8.8	259	–		22	148
2,973.9	103	7.1	147	8.8	147	15.8	229	2.64	(5.7)	13.5	98	8.6	262	20.8	123	20	149
4,761.7	67	15.8	25	12.8	58	21.8	105	2.51	81.9	21.4	22	(10.4)	379	15.8	220	7	150

RANK 1988	RANK 1987	COMPANY	SALES $ Millions	SALES % change from 1987	PROFITS $ Millions	PROFITS Rank	PROFITS % change from 1987	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank
151	144	**OWENS-CORNING FIBERGLAS** Toledo	2,831.0	(2.1)	189.0	146	(5.6)	1,566.0	216	(619.8)	483
152	142	**USG** Chicago	2,810.8	(7.7)	125.4	190	(28.6)	1,821.2	199	(1,470.9)	485
153	158	**FARMLAND INDUSTRIES** Kansas City, Mo.[24]	2,803.4	8.7	N.A.		–	1,057.2	280	306.3	282
154	150	**HERCULES** Wilmington, Del.	2,802.1	4.1	120.4	195	(85.3)	3,320.3	125	2,044.5	74
155	164	**EMHART** Farmington, Conn.	2,762.5	12.5	126.6	189	18.9	2,428.6	164	970.9	144
156	160	**UPJOHN** Kalamazoo, Mich.	2,746.2	8.9	353.4	86	15.9	3,139.3	129	1,821.0	84
157	156	**KERR-MCGEE** Oklahoma City	2,743.0	5.2	110.0	203	35.8	3,123.0	131	1,422.0	114
158	212	**ETHYL** Richmond	2,718.0	58.0	231.0	125	19.5	5,250.6	70	1,128.9	143
159	170	**ZENITH ELECTRONICS** Glenview, Ill.	2,685.7	13.7	11.7**	410	–	1,427.5	230	503.2	248
160	169	**ARMSTRONG WORLD INDUSTRIES** Lancaster, Pa.	2,680.3	13.3	162.7	156	8.2	2,097.7	180	1,021.8	154
161	171	**AMP** Harrisburg, Pa.	2,669.7	15.2	318.1	96	27.8	2,375.5	167	1,521.3	111
162	175	**PITNEY BOWES** Stamford, Conn.	2,665.2	18.4	243.4	121	22.0	4,788.4	86	1,269.2	128
163	173	**UNION CAMP** Wayne, N.J.	2,660.9	15.3	295.1	105	42.3	3,094.4	132	1,559.3	106
164	161	**AMERICAN PETROFINA** Dallas[25]	2,634.7	6.1	132.9	184	59.6	2,355.8	170	830.3	179
165	•	**NATIONAL STEEL** Pittsburgh[26]	2,598.1	7.6	88.2**	237	84.8	1,790.8	202	656.5	213
166	182	**SQUIBB** Princeton, N.J.	2,585.8	19.9	425.5	63	18.7	3,083.1	133	1,400.6	116
167	165	**HERSHEY FOODS** Hershey, Pa.	2,561.2†	5.2	213.9	132	44.4	1,764.7	204	1,005.9	158
168	177	**ROHM & HAAS** Philadelphia	2,535.0	15.1	230.0	126	17.6	2,242.0	173	1,207.0	131
169	180	**B.F. GOODRICH** Akron	2,520.0	16.2	195.7	143	86.4	2,073.0	183	1,154.6	139
170	159	**VF** Wyomissing, Pa.	2,516.1	(2.2)	173.7	151	(3.4)	1,759.9	205	1,095.4	146
171	168	**HILLSBOROUGH HOLDINGS** Tampa[24,27]	2,506.9	5.1	N.A.		–	N.A.		N.A.	
172	167	**REVLON GROUP** New York	2,477.0[28]	3.3	N.A.		–	N.A.		N.A.	
173	204	**NATIONAL SEMICONDUCTOR** Santa Clara, Calif.[6]	2,469.7	32.2	62.7	277	–	1,777.0	203	1,013.6	155
174	130	**BURLINGTON HOLDINGS** New York[6]	2,452.1	(25.2)	(23.8)‡	450	–	2,361.4	168	96.0	434
175	193	**MASCO** Taylor, Mich.	2,438.6	20.5	288.3	109	31.8	2,999.2	137	1,546.1	109
176	183	**AIR PRODUCTS & CHEMICALS** Allentown, Pa.[6]	2,431.9	13.6	213.7	133	37.4	2,999.5	136	1,272.2	126
177	184	**UNIVERSAL** Richmond[6]	2,414.2	14.8	60.7	283	8.5	1,006.6	285	356.9	298
178	178	**PREMARK INTERNATIONAL** Deerfield, Ill.	2,397.0	9.1	105.3	209	47.2	1,655.2	211	754.4	190
179	179	**LAND O'LAKES** Arden Hills, Minn.	2,354.9	7.6	N.A.		–	756.1	337	252.4	355
180	163	**ENGELHARD** Edison, N.J.	2,350.7	(5.2)	63.7	276	(8.7)	1,413.2	235	760.4	189
181	181	**TRIBUNE** Chicago	2,334.8	8.1	210.4	137	48.7	2,941.6	140	1,188.5	135
182	221	**PHELPS DODGE** Phoenix	2,319.8	43.9	420.2	65	104.3	2,755.2	151	1,676.1	97
183	194	**MORTON THIOKOL** Chicago[4]	2,316.4	16.6	145.3	175	5.3	1,920.2	193	1,065.3	149
184	197	**BAKER HUGHES** Houston[6]	2,316.2	20.4	103.2**	216	–	2,117.5	177	961.5	165
185	196	**OLIN** Stamford, Conn.	2,308.0	19.6	98.0	221	25.6	1,940.0	191	683.0	207
186	172	**GEO. A. HORMEL** Austin, Minn.[7]	2,292.8	(0.9)	60.2	286	31.0	706.5	348	418.7	273
187	195	**BLACK & DECKER** Towson, Md.[6]	2,280.9	17.9	97.1	223	74.7	1,825.1	198	724.9	195
188	•	**VALHI** Dallas	2,252.4	62.9	85.9	244	670.8	2,291.2	172	310.6	321
189	203	**PARKER-HANNIFIN** Cleveland[4]	2,251.7	20.0	106.5	207	25.1	1,741.8	207	845.7	178
190	190	**MANVILLE** Denver	2,209.2	7.1	(1,314.3)	476	(1,910.3)	2,200.0	175	798.0	184
191	192	**JOSEPH E. SEAGRAM & SONS** New York[29,30]	2,198.8*	8.4	418.4	67	23.9	6,727.2	54	4,232.6	31
192	188	**KNIGHT-RIDDER** Miami	2,193.8	5.8	156.4	166	0.8	2,357.0	169	821.6	181
193	229	**CENTRAL SOYA** Fort Wayne[24]	2,189.5	43.8	11.4	411	31.3	723.6	345	187.5	388
194	•	**BURLINGTON RESOURCES** Seattle	2,167.3	–	72.1	260	–	5,588.9	65	3,020.0	52
195	189	**WEST POINT-PEPPERELL** West Point, Ga.[6,31]	2,151.1	4.0	84.4	246	17.8	2,453.6	163	783.9	186
196	147	**FRUEHAUF** Detroit	2,142.9	(23.0)	(56.5)	460	–	1,583.7	219	(96.6)	477
197	201	**WESTVACO** New York[7]	2,133.9	12.1	200.4	141	37.1	2,512.8	160	1,318.3	123
198	186	**CORNING GLASS WORKS** Corning, N.Y.	2,121.5	1.8	210.7**	136	1.5	2,897.9	144	1,560.7	104
199	205	**MACK TRUCKS** Allentown, Pa.	2,102.2	13.2	31.8**	350	677.2	1,684.3	210	531.2	243
200	223	**TEMPLE-INLAND** Diboll, Tex.[32]	2,099.0	31.0	199.2	142	40.9	3,370.3	123	1,095.8	145

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				RANK	
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1987	1978-88 annual growth rate		1988		1978-88 annual average		INDUSTRY TABLE NUMBER	
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$		%	Rank	%	Rank	%	Rank		1988
1,150.0	213	6.7	165	11.8	70	–		4.51	(6.2)	0.5	296	35.9	82	22.8	90	4	151
323.8	364	4.5	271	6.9	214	–		2.38	(30.9)	4.1	261	(62.9)	428	10.3	306	4	152
N.A.		–		–		–		N.A.	–	–		–		–		18	153
2,138.1	136	4.3	288	3.6	361	5.9	387	2.55	(82.7)	0.8	294	(1.2)	343	15.3	219	5	154
2,653.1	113	4.6	265	5.2	294	13.0	297	2.02	18.8	4.1	258	13.2	225	16.7	205	14	155
5,418.8	55	12.9	44	11.3	77	19.4	149	1.90	16.6	10.1	159	(1.8)	342	17.1	200	19	156
1,993.5	146	4.0	300	3.5	363	7.7	369	2.27	35.9	(0.1)	302	7.7	268	8.2	325	18	157
2,790.1	108	8.5	115	4.4	335	20.5§	126	1.91	21.7	13.7	96	19.3	179	28.0	39	5	158
527.5	324	0.4	425	0.8	423	2.3	412	0.45**	–	(9.6)	338	28.8	119	5.7	346	6	159
1,712.1	164	6.1	189	7.8	184	15.9	225	3.51	10.4	11.5	134	11.6	240	21.3	115	24	160
4,794.8	66	12.0	52	13.4	52	21.0	116	2.96	28.1	12.8	103	(2.7)	346	18.3	166	7	161
3,398.4	90	9.1	100	5.1	309	19.2	152	3.08	21.7	14.0	88	14.1	214	26.3	58	6	162
2,416.8	120	11.1	62	9.5	117	18.9	157	4.25	50.2	9.7	168	(1.7)	341	12.9	265	9	163
1,103.5	216	5.0	239	5.6	275	16.0	223	10.07	59.3	12.8	104	23.1	148	15.6	222	18	164
N.A.		3.4	329	4.9	316	13.4	288	N.A.	–	–		–		–		15	165
6,372.3	42	16.5	23	13.8	48	30.4	41	4.30	25.7	12.7	105	11.3	242	20.6	129	19	166
2,333.6	126	8.4	117	12.1	66	21.3	113	2.37	44.5	16.8	54	8.9	258	27.4	45	8	167
2,254.8	131	9.1	101	10.3	98	19.1	154	3.46	21.4	17.1	52	12.2	234	24.9	68	5	168
1,336.1	194	7.8	133	9.4	122	16.9§	204	7.42	82.8	5.4	242	32.0	103	17.5	186	5	169
2,218.3	132	6.9	155	9.9	105	15.9	227	2.55	(3.8)	20.7	25	20.7	168	35.4	12	2	170
N.A.		–		–		–		N.A.	–	–		–		–		4	171
N.A.		–		–		–		N.A.	–	–		–		–		23	172
865.3	264	2.5	366	3.5	362	6.2	382	0.48	–	2.3	282	(18.8)	405	7.5	330	7	173
N.A.		(1.0)	441	(1.0)	444	(24.8)	439	(1.88)‡	–	–		–		–		24	174
3,522.9	86	11.8	54	9.6	111	18.6	163	2.10	27.3	13.8	90	19.4	177	20.1	133	10	175
2,415.0	122	8.8	109	7.1	203	16.8	207	3.90	41.3	11.2	141	3.8	308	15.9	217	5	176
609.5	302	2.5	367	6.0	258	17.0	196	3.56	9.5	12.1	119	11.5	241	20.1	132	25	177
1,092.2	218	4.4	276	6.4	234	14.0	276	3.03	45.7	–		42.9	66	–		21	178
N.A.		–		–		–		N.A.	–	–		–		–		8	179
951.8	246	2.7	360	4.5	332	8.4	363	1.42	(11.3)	–		(10.7)	380	–		5	180
2,857.3	105	9.0	103	7.2	201	17.7	186	2.78	54.4	–		(2.7)	345	–		20	181
2,070.0	143	18.1	17	15.3	37	25.1	63	13.15	102.9	27.5	9	15.2	205	11.6	289	15	182
2,094.8	139	6.3	176	7.6	188	13.6	285	3.04	4.8	12.3	116	(5.2)	360	18.0	175	5	183
1,988.6	147	4.5	272	4.9	317	10.7	335	0.82**	–	(4.8)	328	6.0	282	2.1	357	11	184
1,042.8	224	4.2	292	5.1	311	14.3	265	4.63	37.0	5.9	233	25.7	132	15.9	215	5	185
883.8	260	2.6	364	8.5	158	14.4	264	1.57	30.8	11.7	129	4.7	299	26.1	62	8	186
1,386.4	187	4.3	291	5.3	288	13.4	290	1.65	73.7	0.4	297	24.8	138	6.6	339	11	187
1,526.7	175	3.8	310	3.7	355	27.6	50	0.75	650.0	(10.0)	340	33.8	93	16.9	203	5	188
1,383.3	189	4.7	258	6.1	250	12.6	307	2.20	17.0	5.0	247	(20.6)	407	13.9	252	11	189
885.0	259	(59.5)	476	(59.7)	474	(164.7)	450	(10.83)	(647.0)	–		216.7	1	(8.0)	372	4	190
N.A.		19.0	13	6.2	242	9.9	348	N.A.	–	–		–		–		3	191
2,324.3	127	7.1	148	6.6	224	19.0	156	2.76	4.2	9.0	180	16.2	196	17.7	184	20	192
N.A.		0.5	423	1.6	411	6.1	385	N.A.	–	–		–		–		8	193
6,695.1	38	3.3	333	1.3	417	2.4	411	0.46	–	–		–		–		16	194
1,712.5	163	3.9	306	3.4	367	10.8	334	2.82	18.5	5.3	244	73.6	25	25.4	65	24	195
23.8	433	(2.6)	457	(3.6)	456	–		(6.50)	–	–		(16.7)	398	–		17	196
1,836.2	158	9.4	94	8.0	169	15.2	245	3.10	37.8	10.4	154	7.6	271	18.9	155	9	197
3,021.2	100	9.9	82	7.3	198	13.5	287	2.34**	4.2	4.7	250	52.5	46	13.6	256	4	198
440.0	341	1.5	405	1.9	402	6.0	386	1.07**	664.3	–		4.2	302	–		17	199
1,461.9	180	9.5	92	5.9	265	18.2	177	7.15	52.5	–		0.4	329	–		9	200

THE FORTUNE

LARGEST U.S. INDUSTRIAL

RANK 1988	RANK 1987	COMPANY	SALES $ Millions	SALES % change from 1987	PROFITS $ Millions	PROFITS Rank	PROFITS % change from 1987	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank
201	206	**PENNZOIL** Houston	2,088.4	16.9	1,475.4**	13	3,233.9	4,479.6	94	1,290.8	125
202	282	**COMPAQ COMPUTER** Houston	2,065.6	68.7	255.2	118	87.3	1,590.0	218	814.6	182
203	187	**HARRIS** Melbourne, Fla.[4]	2,062.6	(0.8)	100.5	218	18.9	1,643.7	214	972.2	163
204	139	**GENCORP** Fairlawn, Ohio[33]	2,049.0	(33.9)	70.0	265	(85.3)	1,230.0	251	(36.0)	474
205	•	**BERKSHIRE HATHAWAY** Omaha	1,991.9	(7.7)	399.3	71	70.2	6,816.8	53	3,410.1	40
206	•	**MCDERMOTT** New Orleans[34,35]	1,991.5	(2.6)	22.2**	380	–	2,869.4	145	691.9	206
207	255	**ASARCO** New York	1,988.1	46.7	207.2	139	(25.8)	2,223.4	174	1,330.7	121
208	225	**DOVER** New York	1,953.8	23.2	145.8	173	30.5	1,365.6	244	741.1	193
209	185	**SHERWIN-WILLIAMS** Cleveland	1,950.5	(6.9)	101.1	217	4.7	1,258.7	250	601.3	228
210	257	**SEQUA** New York	1,947.6¶	44.3	68.6	269	–	1,959.1	189	700.5	203
211	250	**FREEPORT-MCMORAN** New Orleans	1,944.6	28.4	310.1	100	24.7	3,729.8	109	1,089.5	148
212	207	**TYSON FOODS** Springdale, Ark.[6]	1,936.0	8.4	81.4	250	20.2	889.1	305	341.4	308
213	214	**ILLINOIS TOOL WORKS** Chicago	1,929.8	13.6	149.0	180	31.9	1,380.2	240	744.7	192
214	216	**TRINOVA** Maumee, Ohio	1,918.6	14.1	87.8	239	16.9	1,431.5	227	679.2	209
215	209	**STANLEY WORKS** New Britain, Conn.	1,909.0	8.3	103.5	212	19.4	1,405.2	236	697.9	204
216	199	**MAYTAG** Newton, Iowa	1,908.7	0.0	158.6	162	3.8	1,330.1	247	501.5	249
217	198	**LOUISIANA-PACIFIC** Portland, Ore.	1,903.2	(1.0)	299.6**	104	139.7	1,796.4	200	1,137.1	142
218	208	**POLAROID** Cambridge, Mass.	1,862.9	5.6	(22.6)	449	(119.5)	1,957.2	190	1,011.5	156
219	210	**FORT HOWARD** Green Bay, Wis.	1,858.8	5.7	N.A.		–	N.A.		N.A.	–
220	226	**BECTON DICKINSON** Franklin Lakes, N.J.[6]	1,846.7	16.7	162.3	159	9.3	2,067.5	185	959.8	166
221	213	**CROWN CORK & SEAL** Philadelphia	1,834.1	6.8	93.4	230	5.8	1,073.2	276	648.8	215
222	217	**SPRINGS INDUSTRIES** Fort Mill, S.C.	1,824.8	9.9	52.8	299	(5.1)	1,118.3	265	541.6	239
223	211	**MCGRAW-HILL** New York	1,818.0	3.8	185.5	148	12.6	1,758.4	206	922.8	169
224	•	**DIAMOND SHAMROCK R&M** San Antonio	1,803.9	–	53.5	298	–	843.2	312	354.3	299
225	227	**MAPCO** Tulsa	1,802.4	14.0	117.1	197	8.1	1,375.6	241	610.6	226
226	231	**AMDAHL** Sunnyvale, Calif.	1,801.8	19.7	223.3	131	53.0	1,930.9	192	1,010.8	157
227	222	**GENERAL SIGNAL** Stamford, Conn.	1,760.2	9.8	25.2	371	(63.7)	1,396.6	237	461.0	261
228	215	**NEW YORK TIMES** New York	1,755.2	3.9	167.7	153	4.6	1,914.7	194	875.6	172
229	239	**WILLAMETTE INDUSTRIES** Portland, Ore.	1,716.0	19.9	161.1	161	32.8	1,430.2	228	746.5	191
230	292	**HIMONT** Wilmington, Del.[7,36]	1,710.8	46.8	372.9	81	64.3	1,905.0	195	1,358.1	118
231	228	**INTERNATIONAL MULTIFOODS** Minneapolis[5]	1,697.8	10.7	33.1	347	(35.9)	787.7	325	349.6	305
232	241	**CABOT** Waltham, Mass.[6]	1,676.6	17.7	60.4	285	110.4	1,543.2	223	607.3	227
233	234	**SQUARE D** Palatine, Ill.	1,656.8	11.6	118.9	196	8.1	1,335.7	245	636.0	218
234	218	**COLT INDUSTRIES** New York	1,656.1	0.9	91.0	234	21.3	982.2	288	(844.6)	484
235	233	**MID-AMERICA DAIRYMEN** Springfield, Mo.	1,654.8	10.3	N.A.		–	394.3	443	144.1	410
236	236	**MASCO INDUSTRIES** Taylor, Mich.	1,651.5	12.3	82.1	249	85.3	2,121.4	176	369.0	291
237	269	**OUTBOARD MARINE** Waukegan, Ill.[6]	1,605.1	24.5	77.6	254	25.6	1,141.1	262	579.6	232
238	264	**DOW JONES** New York	1,603.1	22.0	228.2	128	12.4	2,111.8	179	1,160.6	137
239	297	**TYCO LABORATORIES** Exeter, N.H.[5]	1,602.3	43.6	66.5	272	148.0	941.3	296	293.0	333
240	265	**SONOCO PRODUCTS** Hartsville, S.C.	1,599.8	21.9	96.3	225	56.6	977.5	289	454.5	263
241	334	**PRIME COMPUTER** Natick, Mass.[37]	1,594.6	65.9	19.0	391	(70.7)	1,650.9	212	541.7	238
242	240	**WITCO** New York	1,585.9	11.1	91.9	233	45.2	1,114.6	266	578.3	233
243	246	**HOLLY FARMS** Memphis[8]	1,583.2	12.6	36.2	336	(49.5)	756.6	336	386.0	287
244	237	**AVERY INTERNATIONAL** Pasadena, Calif.[38]	1,582.0	7.9	77.7	253	123.7	1,119.1	264	509.4	245
245	280	**TIMKEN** Canton, Ohio	1,554.1	26.3	65.9	275	538.7	1,593.0	217	973.7	162
246	245	**RELIANCE ELECTRIC** Cleveland	1,552.0¶	10.2	24.0	375	500.0	1,367.0	243	132.0	421
247	238	**DEAN FOODS** Franklin Park, Ill.[8]	1,551.8	8.2	42.8	317	4.1	499.1	404	265.7	345
248	242	**PENN CENTRAL** Cincinnati	1,546.5	8.8	103.4	213	185.6	2,400.3	165	1,769.9	91
249	256	**ADOLPH COORS** Golden, Colo.	1,521.7*	12.7	46.9	306	(2.6)	1,570.8	220	1,062.1	151
250	244	**CHICAGO PACIFIC** Chicago[39]	1,500.0[20]	6.2	N.A.		–	N.A.		N.A.	

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS					RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from	1978-88 annual growth rate		1988		1978-88 annual average		INDUSTRY TABLE NUMBER	
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$	1987	%	Rank	%	Rank	%	Rank		1988
3,023.2	99	70.6	1	32.9	4	114.3	2	37.58**	5,346.4	31.2	5	4.8	298	21.4	114	18	201
2,616.5	114	12.4	50	16.1	28	31.3	35	6.30	75.5	–		7.7	269	–		6	202
1,064.7	222	4.9	249	6.1	252	10.3	341	2.50	22.0	1.7	289	7.2	273	2.0	358	7	203
543.4	317	3.4	328	5.7	273	–		3.19	(77.8)	4.5	255	(22.4)	412	14.2	245	1	204
5,416.9	56	20.0	10	5.9	269	11.7	319	348.23	70.3	24.7	16	59.3	37	40.4	4	20	205
N.A.		1.1	416	0.8	424	3.2	405	N.A.	–	–		–		–		7	206
1,155.4	211	10.4	71	9.3	127	15.6§	233	4.92	(7.9)	11.3	139	(1.1)	339	9.3	315	15	207
1,882.9	154	7.5	137	10.7	88	19.7	141	2.22	34.1	13.4	99	(5.9)	363	21.4	112	11	208
1,151.4	212	5.2	231	8.0	166	16.8	205	2.30	7.0	37.5	3	6.5	278	29.3	32	5	209
639.5	296	3.5	325	3.5	364	9.8	350	6.04	52.9	7.5	201	15.5	202	15.4	225	1	210
2,256.9	130	15.9	24	8.3	160	28.5	45	4.13	22.2	24.9	15	22.8	153	19.9	135	5	211
973.1	240	4.2	294	9.2	135	23.9	75	1.11	4.7	20.2	29	34.3	89	37.7	7	8	212
1,793.2	159	7.3	142	10.1	99	18.8	160	2.66	29.1	14.2	85	6.6	277	22.0	100	14	213
982.0	238	4.6	266	6.1	247	12.9	301	2.54	15.5	3.3	274	(11.9)	384	17.9	179	11	214
1,385.3	188	5.4	221	7.4	194	14.8	253	2.40	20.0	7.5	203	13.8	218	17.9	176	14	215
2,124.9	137	8.3	120	11.9	67	31.6	33	2.07	8.4	11.7	127	(9.5)	375	20.2	131	7	216
1,160.2	208	15.7	26	16.7	26	26.3	56	7.84**	139.8	2.9	277	12.0	236	10.8	299	9	217
3,071.3	96	(1.2)	445	(1.2)	447	(2.2)	424	(0.34)	(118.1)	–		58.9	38	6.9	336	22	218
N.A.		–		–		–		N.A.	–	–		–		–		9	219
2,048.9	144	8.8	111	7.8	179	16.9	202	4.01	12.3	11.2	143	3.6	310	15.3	226	22	220
1,278.6	197	5.1	237	8.7	150	14.4	263	3.37	17.7	9.3	174	31.5	105	16.5	207	14	221
684.3	286	2.9	355	4.7	325	9.8	353	2.98	(4.8)	9.4	172	7.1	274	21.1	119	24	222
3,233.3	92	10.2	75	10.5	91	20.1	132	3.83	17.1	11.5	131	32.9	98	21.7	104	20	223
476.2	335	3.0	352	6.3	235	15.1	247	2.14	2,957.1	–		79.5	19	–		18	224
1,287.7	196	6.5	169	8.5	159	19.2	151	5.88	13.1	6.2	224	15.3	203	10.8	298	18	225
1,887.5	152	12.4	49	11.6	71	22.1	101	2.08	47.5	3.8	265	15.5	201	6.6	338	6	226
953.0	244	1.4	408	1.8	407	5.5	392	0.91	(63.0)	(11.0)	341	4.9	295	9.9	310	7	227
2,074.5	141	9.6	90	8.8	146	19.2	153	2.08	6.1	25.2	13	(12.0)	385	21.7	105	20	228
1,156.3	210	9.4	95	11.3	76	21.6	108	6.34	32.6	11.6	130	4.1	304	14.9	235	9	229
2,541.4	116	21.8	7	19.6	16	27.5	52	5.71	51.5	–		18.4	184	–		5	230
363.5	356	1.9	390	4.2	342	9.4§	356	2.20	(37.9)	1.6	286	7.8	266	15.0	231	8	231
1,173.7	207	3.6	320	3.9	349	9.9	346	2.24	115.4	3.9	263	20.2	171	17.8	182	5	232
1,390.8	186	7.2	145	8.9	140	18.7	162	4.44	16.2	4.7	251	(4.5)	358	15.0	230	7	233
N.A.		5.5	218	9.3	130	–		N.A.	–	–		–		–		1	234
N.A.		–		–		–		N.A.	–	–		–		–		8	235
788.0	276	5.0	244	3.9	353	22.2	98	0.93	106.7	–		9.0	257	–		17	236
648.7	294	4.8	251	6.8	220	13.4	291	4.04	19.5	9.9	163	45.3	60	18.2	169	27	237
3,113.4	95	14.2	37	10.8	85	19.7	142	2.35	11.9	17.3	49	0.8	327	21.3	116	20	238
1,547.6	171	4.1	296	7.1	207	22.7	91	1.93	150.6	14.7	79	58.5	40	36.5	9	15	239
1,558.0	170	6.0	190	9.8	106	21.2	114	2.20	57.1	15.8	64	65.1	34	31.2	22	9	240
900.2	255	1.2	412	1.1	419	3.5	402	0.39	(70.5)	6.1	228	12.9	229	14.6	238	6	241
851.4	265	5.8	206	8.2	162	15.9	226	3.86	41.9	8.4	183	9.1	254	19.8	138	5	242
1,103.6	215	2.3	379	4.8	322	9.4	357	2.06	(52.2)	4.3	256	113.5	7	24.2	75	8	243
1,003.5	232	4.9	245	6.9	212	15.3	243	1.77	118.5	13.8	91	9.5	250	22.8	92	9	244
994.3	236	4.2	293	4.1	344	6.8	374	2.34	500.0	(5.3)	330	20.3	169	7.7	329	11	245
N.A.		1.5	404	1.8	409	18.2	176	N.A.	–	–		–		–		7	246
792.1	275	2.8	359	8.6	156	16.1	220	1.60	3.9	13.8	92	23.8	146	29.5	31	8	247
1,641.5	166	6.7	164	4.3	339	5.8	389	1.46	534.8	–		16.3	195	18.7	160	15	248
673.9	288	3.1	345	3.0	381	4.4	399	1.28	(3.0)	(2.0)	316	21.6	162	7.1	334	3	249
N.A.		–		–		–		N.A.	–	–		162.0	3	–		7	250

LARGEST U.S. INDUSTRIAL

RANK		COMPANY	SALES		PROFITS			ASSETS		STOCKHOLDERS' EQUITY	
1988	1987		$ Millions	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank	$ Millions	Rank
251	254	**SUNDSTRAND** Rockford, Ill.	1,477.3	8.2	(76.8)	465	(321.3)	1,567.0	221	590.5	230
252	266	**DOW CORNING** Midland, Mich.	1,476.8	13.3	150.5	169	11.5	1,528.8	224	796.3	185
253	235	**MURPHY OIL** El Dorado, Ark.	1,473.6	0.0	38.8	327	–	2,068.2	184	761.4	188
254	219	**INT'L MINERALS & CHEMICAL** Northbrook, Ill.[4]	1,470.6	(10.2)	113.5**	198	437.9	1,793.8	201	1,027.7	153
255	270	**CRANE** New York	1,451.9¶	13.1	62.5	278	5.4	681.7	352	274.6	341
256	396	**LORAL** New York[34]	1,440.8	108.8	74.3	258	29.4	1,414.8	234	438.3	269
257	281	**E-SYSTEMS** Dallas	1,439.0	17.3	74.6	257	23.5	758.2	333	490.9	251
258	259	**PERKIN-ELMER** Norwalk, Conn.[18]	1,428.6¶	7.1	71.8	261	–	1,368.7	242	722.2	196
259	267	**NORTEK** Providence	1,425.4¶	9.4	19.6**	387	–	1,052.2	281	234.9	364
260	261	**NATIONAL SERVICE INDUSTRIES** Atlanta[24]	1,414.2	6.6	86.1	243	13.8	825.3	318	558.2	236
261	249	**TEKTRONIX** Beaverton, Ore.[8]	1,411.9	1.1	(16.7)	446	(132.6)	1,024.3	282	497.5	250
262	279	**BOWATER** Darien, Conn.	1,410.4	14.6	164.3	155	102.5	1,880.5	196	826.9	180
263	•	**LORILLARD** New York[39]	1,410.3*	8.0	368.2	82	0.2	929.1	299	448.7	268
264	272	**NORTON** Worcester, Mass.	1,410.1	11.8	95.6**	226	43.8	1,088.0	271	582.1	231
265	277	**EG&G** Wellesley, Mass.	1,406.3	13.8	68.7	268	23.8	539.3	391	332.3	312
266	273	**FLEETWOOD ENTERPRISES** Riverside, Calif.[16]	1,406.0	11.6	48.2	304	21.4	514.0	397	343.9	307
267	276	**ESSELTE BUSINESS SYS.** Garden City, N.Y.[40]	1,401.2	12.8	58.9	288	2.8	1,072.7	277	466.7	259
268	260	**WEIRTON STEEL** Weirton, W.Va.	1,383.9	4.1	75.0	255	(6.9)	765.5	331	286.9	334
269	263	**WASHINGTON POST** Washington, D.C.	1,367.6	4.0	269.1	112	44.1	1,422.3	231	868.2	173
270	275	**INSPIRATION RESOURCES** New York	1,366.2	9.9	42.0	319	69.4	841.3	313	414.6	274
271	252	**ARVIN INDUSTRIES** Columbus, Ind.	1,365.3	(0.6)	3.5	427	(92.5)	1,058.1	279	408.5	276
272	271	**DATA GENERAL** Westboro, Mass.[6]	1,364.7	7.1	(15.5)	445	–	1,077.7	274	611.9	225
273	262	**HASBRO** Pawtucket, R.I.	1,340.3	1.1	72.4	259	50.2	1,111.9	267	703.2	201
274	247	**FIELDCREST CANNON** Eden, N.C.	1,338.2	(4.4)	11.3	414	–	811.9	321	264.2	346
275	367	**CYPRUS MINERALS** Englewood, Colo.	1,327.1	66.9	170.0	152	550.1	1,650.7	213	1,204.0	132
276	258	**WILSON FOODS** Oklahoma City[18]	1,324.0	(1.8)	6.6	423	17.9	218.9	485	78.1	448
277	340	**GENERAL INSTRUMENT** New York[9]	1,315.5¶	38.9	66.2	274	–	1,093.6	270	551.0	237
278	318	**TANDEM COMPUTERS** Cupertino, Calif.[6]	1,314.7	27.0	94.5	227	(10.5)	1,318.4	248	856.9	176
279	283	**LAFARGE** Reston, Va.[41]	1,309.2	7.2	93.5	229	24.6	1,199.4	255	682.1	208
280	293	**AM INTERNATIONAL** Chicago[18]	1,297.4¶	11.6	(20.4)	448	(263.3)	776.9	328	232.5	367
281	299	**ECHLIN** Branford, Conn.[34]	1,294.3	17.7	62.1	279	36.0	1,086.6	272	634.3	220
282	291	**HARSCO** Wormleysburg, Pa.	1,279.0	9.4	31.1	351	(50.9)	893.1	303	421.3	272
283	315	**CLARK EQUIPMENT** South Bend, Ind.	1,278.3	22.0	46.1**	308	–	951.6	293	407.0	277
284	294	**CERTAINTEED** Valley Forge, Pa.[42]	1,266.6	9.3	56.8	291	(7.5)	1,107.5	268	734.8	194
285	335	**SEAGATE TECHNOLOGY** Scotts Valley, Calif.[4]	1,266.0	32.1	77.3	255	(44.7)	1,094.0	269	436.4	270
286	296	**CLOROX** Oakland[4]	1,259.9	11.9	132.6	185	26.4	1,156.0	258	712.9	200
287	295	**FARMERS UNION CENTRAL EXCH.** St. Paul[6]	1,259.4	10.6	N.A.		–	606.0	369	285.3	337
288	301	**JEFFERSON SMURFIT** St. Louis[43]	1,255.3	14.2	144.5	177	57.1	816.9	320	312.9	320
289	303	**CYCLOPS INDUSTRIES** Pittsburgh	1,250.8¶	13.9	28.6	359	–	514.6	396	34.6	463
290	333	**YORK HOLDINGS** York, Pa.[44]	1,235.5	28.3	(72.7)	464	(363.2)	1,016.0	284	(16.3)	471
291	289	**PENNWALT** Philadelphia	1,226.2¶	2.5	178.7	149	240.7	949.5	295	225.8	370
292	251	**NATIONAL GYPSUM** Dallas[41]	1,220.9	(11.5)	(79.6)‡	466	–	1,610.0	215	77.3	449
293	•	**E.W. SCRIPPS** Wilmington, Del.	1,214.5	5.9	70.1	264	18.1	1,556.3	222	628.1	222
294	350	**ALLEGHENY LUDLUM** Pittsburgh	1,207.5	39.3	108.6	206	135.0	703.9	349	225.6	371
295	320	**FIGGIE INTERNATIONAL** Willoughby, Ohio	1,200.2	17.4	61.9	280	25.4	1,022.0	283	365.8	292
296	339	**DELUXE** St. Paul[45]	1,196.0	26.2	143.4	178	(3.5)	786.1	326	567.7	234
297	323	**RUBBERMAID** Wooster, Ohio	1,193.5	17.6	99.3	220	17.5	781.7	327	511.4	244
298	314	**HARNISCHFEGER INDUSTRIES** Brookfield, Wis.[7]	1,187.5	13.2	14.4‡	402	(37.1)	1,194.7	256	461.4	260
299	312	**LIZ CLAIBORNE** New York	1,184.2	12.4	110.3	202	(3.6)	629.1	367	457.8	262
300	308	**MCCORMICK** Hunt Valley, Md.[33]	1,183.9	9.8	42.7	318	39.6	770.2	330	294.3	330

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS					RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY				1978-88 annual growth rate		1988		1978-88 annual average		INDUSTRY TABLE NUMBER	
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$	% change from 1987	%	Rank	%	Rank	%	Rank		1988
1,024.1	228	(5.2)	462	(4.9)	459	(13.0)	436	(4.15)	(324.3)	–		22.0	159	12.7	268	1	251
N.A.		10.2	76	9.8	107	18.9	158	N.A.	–	–		–		–		5	252
1,240.6	200	2.6	363	1.9	403	5.1	394	1.14	–	(0.9)	308	33.1	95	10.5	302	18	253
877.6	262	7.7	135	6.3	236	11.0	331	3.66**	1,080.6	(1.8)	315	(17.1)	400	11.0	297	5	254
540.3	319	4.3	287	9.2	134	22.8	90	2.78	5.7	9.6	169	35.6	83	17.4	190	11	255
919.7	252	5.2	233	5.3	291	17.0	198	3.01	28.1	15.5	67	4.3	301	18.3	165	7	256
915.3	253	5.2	232	9.8	108	15.2	246	2.40	23.1	15.4	69	12.3	232	22.8	93	7	257
966.8	242	5.0	242	5.2	292	9.9	347	[illegible].51	–	6.2	225	5.1	292	8.1	326	22	258
128.6	418	1.4	410	1.9	405	8.3	364	1.34**	–	4.6	254	32.1	102	3.7	351	4	259
1,188.3	206	6.1	188	10.4	93	15.4	240	1.75	13.6	11.5	133	4.6	300	24.9	69	7	260
637.0	298	(1.2)	444	(1.6)	449	(3.4)	427	(0.55)	(141.4)	–		(15.5)	396	0.2	360	22	261
985.7	237	11.7	56	8.7	149	19.9	136	4.37	105.2	–		(4.5)	357	–		9	262
N.A.		26.1	4	39.6	3	82.0	5	N.A.	–	–		–		–		25	263
1,313.5	231	6.8	159	8.8	144	16.4	214	4.55**	42.2	1.9	285	8.1	265	11.8	282	4	264
952.8	245	4.9	248	12.7	59	20.7	122	2.30	15.0	14.1	86	(11.9)	383	16.5	209	22	265
632.8	300	3.4	327	9.4	124	14.0	273	2.08	22.4	10.3	155	46.9	55	20.0	134	27	266
720.6	280	4.2	295	5.5	280	12.6	306	2.87	2.9	–		(3.8)	353	–		9	267
N.A.		5.4	222	9.8	109	26.1	58	N.A.	–	–		–		–		15	268
2,765.6	109	19.7	12	18.9	18	31.0	38	20.91	44.0	21.2	23	13.6	220	26.2	60	20	269
580.1	310	3.1	347	5.0	314	10.1	343	0.63	65.8	–		1.9	324	–		5	270
434.2	343	0.3	431	0.3	431	0.9	418	0.01	(99.6)	(40.1)	350	4.0	305	17.3	195	17	271
500.5	331	(1.1)	443	(1.4)	448	(2.5)	425	(0.55)	–	–		(21.7)	411	(4.8)	369	6	272
968.2	241	5.4	223	6.5	228	10.3	342	1.24	51.2	–		18.9	180	54.3	1	26	273
235.9	387	0.8	419	1.4	415	4.3	400	1.10	–	(9.7)	339	42.9	67	10.7	301	24	274
1,050.3	223	12.8	46	10.3	96	14.1	271	6.31	518.6	–		34.9	86	–		16	275
145.5	410	0.5	424	3.0	380	8.5	361	0.65	(3.0)	–		88.5	15	–		8	276
1,019.5	230	5.0	240	6.1	255	12.0	315	2.01	–	7.1	206	(13.0)	388	12.9	266	7	277
1,845.8	156	7.2	144	7.2	200	11.0	332	0.96	(11.1)	28.5	6	(38.6)	423	23.4	84	6	278
811.3	273	7.1	146	7.8	181	13.7§	282	1.96	18.8	–		42.4	68	–		4	279
294.3	375	(1.6)	449	(2.6)	453	(11.7)	435	(0.53)	(581.8)	–		5.3	290	(13.3)	374	11	280
912.1	254	4.8	256	5.7	272	9.8	351	1.12	27.3	5.6	237	22.2	158	11.2	296	17	281
664.5	292	2.4	370	3.5	365	7.4	371	1.17	(46.8)	(3.1)	323	4.8	296	16.9	202	14	282
586.5	309	3.6	318	4.8	321	11.3	328	2.70**	–	(7.8)	336	27.5	123	2.2	356	11	283
N.A.		4.5	270	5.1	306	7.7	370	2.99	(7.4)	(0.8)	306	–		–		4	284
503.8	328	6.1	187	7.1	205	17.7	185	1.54	(45.2)	–		(42.0)	426	–		6	285
1,785.3	160	10.5	69	11.5	74	18.6	165	2.46	25.5	12.4	114	16.6	191	25.0	67	23	286
N.A.		–		–		–		N.A.	–	–		–		–		18	287
1,220.1	204	11.5	58	17.7	23	46.2	14	3.72	56.0	–		14.4	210	–		9	288
175.8	400	2.3	380	5.6	277	82.6	4	4.15	–	–		(7.4)	369	–		15	289
N.A.		(5.9)	464	(7.2)	461	–		N.A.	–	–		121.4	6	–		11	290
939.7	249	14.6	33	18.8	19	79.1	7	14.34	256.7	12.2	117	139.4	4	19.2	147	5	291
N.A.		(6.5)	466	(4.9)	460	(103.0)	449	N.A.	–	–		–		–		4	292
1,447.0	182	5.8	208	4.5	333	11.2	329	0.93	13.4	–		–		–		20	293
886.1	258	9.0	104	15.4	36	48.2	13	4.81	111.9	–		38.8	73	–		15	294
676.1	287	5.2	234	6.1	256	16.9	199	9.03	28.6	14.5	82	22.6	156	27.3	46	11	295
2,298.8	128	12.0	51	18.2	21	25.3	60	1.68	(3.4)	17.1	53	6.2	279	24.8	71	20	296
1,930.4	148	8.3	119	12.7	61	19.4	148	1.35	17.4	16.0	60	2.6	320	27.6	41	21	297
529.6	322	1.2	411	1.2	418	3.1	406	0.51‡	(46.9)	(12.8)	344	(9.7)	376	2.4	355	11	298
1,492.1	177	9.3	97	17.5	24	24.1	72	1.26	(4.5)	–		5.7	284	–		2	299
590.6	308	3.6	319	5.5	278	14.5	259	1.83	41.3	9.5	171	56.8	41	17.8	183	8	300

RANK		COMPANY	SALES		PROFITS			ASSETS		STOCKHOLDERS' EQUITY	
1988	1987		$ Millions	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank	$ Millions	Rank
301	288	**ARMTEK** Williamsville, N.Y.[6]	1,179.9	(1.5)	8.5	421	(58.6)	588.3	375	258.9	348
302	309	**FEDERAL-MOGUL** Southfield, Mich.	1,176.9	9.4	41.7	321	1.3	811.3	322	362.0	295
303	298	**AMERICAN GREETINGS** Cleveland[9]	1,174.8	6.6	33.4	344	(47.3)	1,150.3	259	538.7	241
304	307	**HARTMARX** Chicago[33]	1,174.3	8.7	38.0	330	(7.9)	734.1	343	358.5	297
305	332	**VARIAN ASSOCIATES** Palo Alto, Calif.[6]	1,170.6	19.1	27.8	361	29.9	855.8	310	451.0	266
306	286	**DWG** Miami Beach[16]	1,167.9	(3.8)	36.3	335	99.2	913.0	301	159.3	401
307	317	**GERBER PRODUCTS** Fremont, Mich.[34]	1,165.6¶	11.5	21.2	382	(25.6)	726.5	344	325.9	315
308	305	**CROWN CENTRAL PETROLEUM** Baltimore	1,149.3	5.8	38.4	328	20.8	442.9	423	295.1	328
309	290	**TOSCO** Santa Monica, Calif.	1,142.5	(3.8)	90.4**	235	70.8	556.3	386	268.8	344
310	274	**UNION TEXAS PETROLEUM HOLDINGS** Houston	1,136.5	(9.6)	109.3	205	95.4	1,716.8	209	171.2	397
311	328	**ADVANCED MICRO DEVICES** Sunnyvale, Calif.	1,125.9	12.9	19.3	389	–	1,081.3	273	644.8	216
312	324	**LUBRIZOL** Wickliffe, Ohio	1,117.5	10.3	140.0	181	72.1	970.7	290	664.3	212
313	319	**FEDERAL PAPER BOARD** Montvale, N.J.	1,116.9	8.9	143.3	179	117.9	1,335.3	246	641.3	217
314	326	**WHEELING-PITTSBURGH STEEL** Wheeling	1,103.0	10.1	258.5**	116	–	1,286.4	249	(24.1)	473
315	341	**RAYCHEM** Menlo Park, Calif.[4]	1,094.7	15.9	125.3	191	70.2	1,149.0	260	722.2	197
316	337	**TECUMSEH PRODUCTS** Tecumseh, Mich.	1,093.5	15.0	70.2	263	(2.0)	900.0	302	618.0	224
317	330	**POTLATCH** San Francisco	1,084.1	9.3	112.4	201	28.2	1,417.7	233	722.0	198
318	311	**BALL** Muncie, Ind.	1,073.0	1.8	50.5	302	(23.8)	876.5	308	421.4	271
319	342	**BEMIS** Minneapolis	1,069.0	15.0	39.6	325	24.0	595.0	373	237.4	362
320	302	**BROWN-FORMAN** Louisville, Ky.[16]	1,066.6*	(2.9)	103.4	214	15.4	932.3	298	454.4	264
321	344	**ARISTECH CHEMICAL** Pittsburgh	1,065.2	15.9	188.2	147	170.0	676.1	353	410.4	275
322	327	**A.O. SMITH** Milwaukee	1,063.2	6.4	19.0	390	3.0	807.7	323	293.3	332
323	352	**NUCOR** Charlotte, N.C.	1,061.4	24.7	109.4	204	116.6	949.7	294	532.3	242
324	392	**GEORGIA GULF** Atlanta	1,060.6	49.9	193.6	144	136.5	457.3	420	256.1	351
325	248	**AMSTAR** Stamford, Conn.[4]	1,057.3	(24.5)	(5.7)	438	(124.3)	642.4	363	62.8	454
326	310	**VULCAN MATERIALS** Birmingham, Ala.	1,053.2	(0.9)	136.0	182	17.0	957.6	292	634.3	219
327	463	**SUN MICROSYSTEMS** Mountain View, Calif.[4]	1,051.6	95.6	66.4	273	83.0	757.2	335	370.0	290
328	232	**GOLD KIST** Atlanta[4]	1,043.7	(30.4)	N.A.		–	489.2	410	201.3	380
329	343	**RORER GROUP** Fort Washington, Pa.	1,041.6	12.1	61.8	281	13.8	1,388.0	239	449.7	267
330	500	**M.A. HANNA** Cleveland	1,019.0	121.8	83.2	247	129.4	963.9	291	469.1	258
331	336	**MACMILLAN** New York[46]	1,019.0[20]	6.6	N.A.		–	N.A.		N.A.	
332	349	**FERRO** Cleveland	1,009.0	15.8	46.6	307	47.1	588.1	376	295.3	327
333	325	**FRUIT OF THE LOOM** Chicago	1,004.7	(0.8)	67.6	270	–	1,830.4	197	257.6	350
334	300	**TYLER** Dallas	995.7¶	(9.4)	21.0	384	74.6	348.5	454	51.6	459
335	354	**NALCO CHEMICAL** Naperville, Ill.	994.1	18.1	106.0	208	32.0	838.9	315	477.5	257
336	373	**FUQUA INDUSTRIES** Atlanta	993.2	28.6	92.7	232	47.2	1,146.0	261	399.9	280
337	322	**MATTEL** Hawthorne, Calif.	990.0	(3.0)	35.9	337	–	693.4	351	130.9	423
338	386	**NEWELL** Freeport, Ill.	988.2	37.3	61.4	282	65.0	820.0	319	400.3	279
339	355	**BAUSCH & LOMB** Rochester, N.Y.	978.3	16.4	97.9	222	14.7	1,210.9	252	629.0	221
340	374	**ANCHOR GLASS CONTAINER** Tampa	977.8	27.6	(8.5)	441	(142.5)	773.4	329	77.1	450
341	250	**ALLEGHENY INTERNATIONAL** Pittsburgh[6]	967.8	(30.4)	(25.1)	452	–	840.6	314	(281.8)	481
342	356	**GAF** Wayne, N.J.	961.4	14.9	100.3	219	(57.8)	1,421.1	232	623.5	223
343	359	**AMSTED INDUSTRIES** Chicago[6]	960.4	16.7	11.3	413	–	578.1	381	84.2	438
344	395	**SHAW INDUSTRIES** Dalton, Ga.[4]	958.3	38.0	33.8	343	18.4	546.3	389	157.1	402
345	363	**CF INDUSTRIES** Long Grove, Ill.	957.8	18.3	N.A.		–	991.4	287	494.1	254
346	351	**A.H. ROBINS** Richmond	933.8	9.1	58.4	290	–	1,074.8	275	(1,505.4)	486
347	347	**SAVANNAH FOODS & INDUSTRIES** Savannah	916.9	4.3	20.1	385	43.0	395.1	442	134.5	419
348	316	**SMITHFIELD FOODS** Smithfield, Va.[16]	916.3	(12.5)	16.6	396	152.0	130.9	488	39.2	462
349	415	**COOPER COS.** Palo Alto, Calif.[7]	915.7	45.9	(207.4)	471	(498.9)	1,137.6	263	47.8	460
350	369	**BRIGGS & STRATTON** Wauwatosa, Wis.[4]	914.1	16.5	30.2	354	13.5	510.6	400	303.3	325

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				RANK	
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1987	1978-88 annual growth rate		1988		1978-88 annual average		INDUSTRY TABLE NUMBER	
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$		%	Rank	%	Rank	%	Rank		1988
N.A.		0.7	421	1.4	414	3.3	404	0.82	(60.6)	(4.2)	327	–		–		21	301
637.8	297	3.5	322	5.1	305	11.5	325	3.33	2.8	1.6	290	47.7	59	19.4	144	17	302
740.2	278	2.8	357	2.9	387	6.2	381	1.04	(47.2)	3.6	269	53.4	45	17.9	178	20	303
511.1	325	3.2	340	5.2	301	10.6	336	2.03	1.0	8.1	187	7.7	267	22.8	89	2	304
547.5	316	2.4	373	3.2	377	6.2	384	1.27	29.6	4.6	253	16.0	199	16.9	201	7	305
127.5	419	3.1	344	4.0	348	22.8	88	1.11	91.4	12.6	111	–		18.1	170	24	306
1,274.6	198	1.8	393	2.9	386	6.5	378	1.07	(24.6)	(2.0)	317	75.0	24	24.5	73	8	307
170.4	402	3.3	331	8.7	151	13.0	296	4.70	24.3	2.6	281	48.7	56	9.3	317	18	308
183.4	399	7.9	129	16.3	27	33.6	28	1.32**	109.5	4.7	249	78.6	21	(5.5)	370	18	309
1,037.0	225	9.6	89	6.4	232	40.0§	21	0.73	1,360.0	–		31.6	104	–		16	310
689.5	284	1.7	400	1.8	408	3.0	407	0.11	–	(1.7)	314	(12.7)	387	13.6	258	7	311
1,434.9	183	12.5	48	14.4	44	21.1	115	3.62	75.7	6.2	223	13.0	227	9.0	320	5	312
997.3	235	12.8	45	10.7	86	22.3	96	3.51	114.7	–		4.9	294	17.4	194	9	313
69.0	430	23.4	5	20.1	12	–		48.69**	–	27.7	8	29.6	115	(1.2)	363	15	314
1,213.0	205	11.4	59	10.9	82	17.3	190	3.69	64.2	17.9	47	(20.9)	409	13.1	263	7	315
793.2	274	6.4	171	7.8	180	11.4	327	12.84	(1.9)	3.5	272	13.8	216	15.0	232	11	316
925.0	251	10.4	73	7.9	173	15.6	235	4.04	29.1	6.7	216	13.2	224	11.9	281	9	317
633.9	299	4.7	259	5.8	271	12.0	316	2.17	(22.5)	8.5	182	(18.5)	404	22.0	101	14	318
691.1	283	3.7	314	6.7	222	16.7	208	1.48	25.4	11.9	122	23.7	147	30.1	27	9	319
1,713.6	162	9.7	88	11.1	79	22.8	89	3.25	16.9	14.8	77	68.6	30	20.9	121	3	320
943.2	248	17.7	19	27.8	5	45.9	15	7.57	179.3	–		6.8	276	–		5	321
170.1	403	1.8	397	2.4	390	6.5	380	1.86	6.9	(6.6)	332	24.6	139	6.4	340	17	322
997.9	233	10.3	74	11.5	72	20.6	124	5.16	115.9	14.8	78	21.7	161	22.4	97	15	323
1,094.9	217	18.3	16	42.3	2	75.6	9	6.75	140.6	–		43.0	65	–		5	324
N.A.		(0.5)	436	(0.9)	442	(9.1)	432	N.A.	–	–		–		–		8	325
1,766.8	161	12.9	43	14.2	46	21.4	110	3.30	20.7	11.5	132	30.0	114	23.9	79	16	326
1,233.1	202	6.3	174	8.8	145	18.0	182	1.79	61.3	–		(0.7)	335	–		6	327
N.A.		–		–		–		N.A.	–	–		–		–		8	328
1,240.5	201	5.9	195	4.5	334	13.8	280	1.96	17.4	8.0	190	82.0	17	17.9	177	19	329
509.3	326	8.2	124	8.6	153	17.7	183	3.48	111.3	6.1	226	51.6	49	3.1	352	5	330
N.A.		–		–		–		N.A.	–	–		62.8	35	38.8	5	20	331
483.0	334	4.6	263	7.9	172	15.8	231	3.40	47.8	6.4	221	51.2	50	15.9	216	21	332
484.7	333	6.7	161	3.7	358	26.2	57	1.10	–	–		27.5	122	–		2	333
144.9	411	2.1	386	6.0	259	40.7	20	1.11	63.2	0.4	298	52.4	47	9.6	313	14	334
1,378.7	190	10.7	68	12.6	62	22.2	100	2.70	33.0	10.6	152	10.4	246	14.9	236	5	335
645.6	295	9.3	96	8.1	164	23.2	82	4.29	46.9	22.5	20	6.1	281	33.9	17	11	336
502.6	329	3.6	316	5.2	300	27.5	53	0.75	–	(7.1)	334	38.2	75	3.9	349	26	337
717.3	281	6.2	182	7.5	190	15.3	242	2.18	58.5	18.8	38	106.0	11	35.8	11	14	338
1,400.7	185	10.0	81	8.1	165	15.6	234	3.27	16.4	9.9	162	28.2	121	19.6	140	22	339
151.2	409	(0.9)	440	(1.1)	445	(11.0)	434	(0.61)	(142.1)	–		(48.3)	427	–		4	340
17.6	434	(2.6)	456	(3.0)	454	–		(5.10)	–	–		(40.9)	424	(16.7)	376	7	341
1,426.8	184	10.4	70	7.1	206	16.1	219	3.51	(49.6)	11.9	124	3.6	311	26.5	52	5	342
N.A.		1.2	413	2.0	401	6.2§	383	0.56	–	–		–		–		15	343
393.3	350	3.5	324	6.2	246	21.5	109	2.13	25.3	20.2	28	49.4	54	33.7	18	24	344
N.A.		–		–		–		N.A.	–	–		–		–		5	345
652.4	293	6.3	178	5.4	281	–		2.42	–	7.7	195	25.6	133	14.1	248	19	346
319.3	366	2.2	382	5.1	310	14.9§	252	1.50	(28.9)	7.8	193	34.2	91	34.8	14	8	347
95.1	426	1.8	394	12.7	60	42.5	18	3.72	151.4	10.8	147	36.6	81	29.6	30	8	348
102.3	423	(22.7)	473	(18.2)	470	(456.4)	454	(9.39)	(511.8)	–		(36.2)	422	–		22	349
403.2	348	3.3	334	5.9	264	10.0	345	2.09	13.6	(2.1)	318	12.2	233	6.8	337	11	350

THE FORTUNE

LARGEST U.S. INDUSTRIAL

351-400

RANK		COMPANY	SALES		PROFITS			ASSETS		STOCKHOLDERS' EQUITY	
1988	1987		$ Millions	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank	$ Millions	Rank
351	400	**AG PROCESSING** Omaha[24]	910.2	34.6	N.A.		–	227.3	482	97.8	433
352	419	**MAGNETEK** Los Angeles[4]	908.7	49.4	19.5	388	301.2	579.7	378	27.8	465
353	404	**ROHR INDUSTRIES** Chula Vista, Calif.[18]	906.8	36.7	32.5	348	20.7	882.7	306	374.7	289
354	362	**WORTHINGTON INDUSTRIES** Columbus, Ohio[8]	904.2	10.4	56.1	295	33.1	506.6	402	286.2	335
355	382	**CONSOLIDATED PAPERS** Wisconsin Rapids, Wis.	896.8	20.7	149.9	171	56.5	934.6	297	717.4	199
356	358	**INTERLAKE** Oak Brook, Ill.	892.2	8.4	39.6	326	(27.3)	660.5	359	269.9	342
357	371	**WM. WRIGLEY JR.** Chicago	891.4	14.1	87.2	240	24.4	440.4	426	308.5	322
358	360	**MEMOREX TELEX** Tulsa[34,47]	890.2	8.3	(6.5)	439	(108.5)	1,390.9	238	(18.3)	472
359	384	**HILLENBRAND INDUSTRIES** Batesville, Ind.[33]	884.3	22.0	69.7	266	21.4	734.7	342	353.3	301
360	372	**SPX** Muskegon, Mich.[48]	877.7	13.4	44.9	310	72.0	702.4	350	321.4	316
361	338	**PACIFIC RESOURCES** Honolulu	876.9	(7.6)	40.1	323	552.4	511.6	398	232.9	366
362	379	**STORAGE TECHNOLOGY** Louisville, Colo.	874.0	16.5	44.2	312	70.1	847.5	311	284.4	338
363	353	**QUAKER STATE** Oil City, Pa.	862.1	2.5	14.9	399	–	739.9	340	314.7	318
364	357	**CINCINNATI MILACRON** Cincinnati	857.8	3.6	37.1**	334	–	721.5	346	227.3	368
365	380	**IBC HOLDINGS** Kansas City, Mo.[8,49]	855.0	14.1	(27.3)	454	(295.7)	646.4	361	11.1	468
366	378	**SNAP-ON TOOLS** Kenosha, Wis.	854.6	13.3	113.3	199	27.9	667.5	354	505.2	247
367	381	**INT'L FLAVORS & FRAGRANCES** New York	839.5	12.6	128.7	188	20.2	882.3	307	695.4	205
368	•	**SHELLER-GLOBE** Toledo	835.4[20]	–	N.A.		–	N.A.		N.A.	
369	370	**DEXTER** Windsor Locks, Conn.	827.3	5.7	35.5	340	(17.0)	626.4	368	307.2	324
370	368	**PENTAIR** St. Paul	823.3	4.3	39.8	324	82.3	744.7	339	281.7	339
371	406	**LEGGETT & PLATT** Carthage, Mo.	809.9	24.7	37.7	331	0.7	477.6	412	245.4	360
372	409	**INTERGRAPH** Huntsville, Ala.	800.2	24.8	88.0	238	25.9	830.7	317	667.1	211
373	364	**MOHASCO** Fairfax, Va.	790.5	(2.0)	(18.1)	447	(242.4)	N.A.		N.A.	
374	329	**CHAMPION SPARK PLUG** Toledo	784.6	(21.2)	23.6	377	23.6	575.6	384	349.9	304
375	421	**VISTA CHEMICAL** Houston[6]	781.4	28.3	113.1	200	–	520.9	394	139.7	414
376	456	**SCI SYSTEMS** Huntsville, Ala.[4]	774.2	40.0	19.0	392	18.8	485.1	411	151.6	404
377	407	**PITTWAY** Northbrook, Ill.	771.1	18.8	37.3	332	15.2	601.7	371	334.7	311
378	414	**VALERO ENERGY** San Antonio	770.6	22.6	30.6	353	136.9	926.5	300	507.9	246
379	399	**EAGLE-PICHER INDUSTRIES** Cincinnati[33]	770.1	13.7	(465.8)	475	(1,264.8)	583.4	377	(267.5)	480
380	499	**WESTERN DIGITAL** Irvine, Calif.[4]	768.3	66.1	43.4**	314	(9.9)	550.7	388	255.0	352
381	393	**KAMAN** Bloomfield, Conn.	767.2	8.5	25.3	370	4.8	420.4	433	178.6	393
382	385	**OCEAN SPRAY CRANBERRIES** Lakeville, Mass.[24]	766.6	6.1	N.A.		–	464.4	417	172.6	396
383	408	**C.R. BARD** Murray Hill, N.J.	757.5	18.1	78.7	252	26.4	531.0	392	328.6	314
384	398	**HARLEY-DAVIDSON** Milwaukee	757.4	10.5	23.9‡	376	12.7	401.1	439	121.6	425
385	397	**CRAY RESEARCH** Minneapolis	756.3	10.0	156.6	165	6.5	991.4	286	676.8	210
386	388	**MEDIA GENERAL** Richmond	755.7	5.7	8.8	419	(79.5)	859.0	309	252.4	354
387	387	**INSILCO** Meriden, Conn.	753.2	4.9	N.A.		–	N.A.		N.A.	
388	365	**DANAHER** Washington, D.C.	752.4	(6.3)	44.0**	313	131.9	575.8	383	155.7	403
389	430	**MARION LABORATORIES** Kansas City, Mo.[4]	752.0	25.9	150.0	170	54.8	553.7	387	381.5	288
390	•	**STANDARD COMMERCIAL** Wilson, N.C.[34]	750.0	21.3	17.1	395	28.4	491.2	409	147.0	407
391	402	**COOPER TIRE & RUBBER** Findlay, Ohio	748.0	12.4	41.1	322	33.8	442.6	424	257.8	349
392	366	**FLOWERS INDUSTRIES** Thomasville, Ga.[4]	737.7	(7.5)	43.2	316	56.4	433.6	431	198.2	382
393	375	**UNITED MERCHANTS & MFRS.** New York[4]	722.8	(5.2)	(37.0)	457	–	457.3	419	61.9	455
394	391	**DENNISON MANUFACTURING** Framingham, Mass.	721.8	1.9	37.2	333	8.1	515.9	395	255.0	353
395	361	**LOUISIANA LAND & EXPLORATION** New Orleans	720.6	(12.0)	(33.3)	456	(234.3)	1,428.9	229	489.2	252
396	390	**UNIVERSAL FOODS** Milwaukee[6]	719.5	1.4	27.6	363	11.4	404.2	438	177.7	394
397	•	**REXENE** Dallas	719.1	39.4	129.5	186	66.0	511.0	399	219.1	374
398	439	**HERMAN MILLER** Zeeland, Mich.[8]	713.6	24.4	44.6	311	34.1	433.9	430	248.3	356
399	401	**CHESAPEAKE** Richmond	711.3	5.3	51.5	300	70.5	662.1	358	279.2	340
400	483	**ATARI** Sunnyvale, Calif.	705.2[1]	43.0	(84.8)	469	(247.7)	371.2	448	83.2	439

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				INDUSTRY TABLE NUMBER	RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY				1978-88 annual growth rate		1988		1978-88 annual average			
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$	% change from 1987	%	Rank	%	Rank	%	Rank		1988
N.A.		–		–		–		N.A.	–	–		–		–		8	351
N.A.		2.1	383	3.4	371	59.8§	10	34.58	650.1	–		–		–		7	352
616.9	301	3.6	321	3.7	359	8.7	360	1.85	20.9	(2.2)	319	72.9	26	12.8	267	1	353
893.0	257	6.2	183	11.1	80	19.6	145	1.37	34.3	15.0	75	37.7	77	18.2	168	15	354
1,525.7	176	16.7	22	16.0	29	20.9	119	3.44	56.4	12.7	108	26.0	129	23.4	85	9	355
435.5	342	4.4	274	6.0	262	14.7	257	3.75	(20.0)	15.5	68	2.8	317	22.7	94	11	356
1,459.7	181	9.8	84	19.8	14	28.3	46	2.18	29.4	12.5	113	7.7	270	18.0	173	8	357
N.A.		(0.7)	438	(0.5)	436	–		N.A.	–	–		–		–		6	358
997.6	234	7.9	132	9.5	118	19.7	137	1.86	23.2	15.6	66	25.4	135	26.6	49	14	359
509.3	327	5.1	236	6.4	231	14.0	274	3.64	71.7	8.1	189	34.3	90	18.2	167	17	360
318.5	367	4.6	267	7.8	178	17.2	194	2.11	1,306.7	11.5	135	37.2	78	11.4	292	18	361
456.5	339	5.1	238	3.2	293	15.6	236	0.19	72.7	(16.4)	346	(6.7)	367	(19.5)	377	6	362
468.1	337	1.7	399	2.0	397	4.7	397	0.57	–	(6.9)	333	15.0	207	9.8	312	18	363
562.7	314	4.3	285	5.1	304	16.3	217	1.52**	–	0.2	301	8.7	261	10.3	305	11	364
N.A.		(3.2)	458	(4.2)	457	(245.6)	453	N.A.	–	–		–		–		8	365
1,488.1	178	13.3	39	17.0	25	22.4	95	2.72	27.7	12.7	106	3.1	314	17.8	181	14	366
1,924.3	150	15.3	27	14.6	41	18.5	167	3.40	20.1	8.3	184	15.1	206	11.7	283	23	367
N.A.		–		–		–		N.A.	–	–		–		–		17	368
827.0	271	4.3	289	5.7	274	11.6	324	1.43	(16.9)	4.1	260	(2.0)	343	14.2	244	5	369
328.9	361	4.8	250	5.4	286	14.1	270	3.70	89.3	6.0	230	69.6	28	20.7	125	11	370
429.8	345	4.7	260	7.9	174	15.4	241	2.21	(3.1)	11.7	128	10.6	244	21.4	111	10	371
1,067.4	221	11.0	64	10.6	90	13.2	293	1.55	26.0	–		(15.2)	395	–		6	372
434.0	344	(2.3)	454	–		–		(1.35)	(246.7)	–		96.6	12	22.9	88	10	373
724.3	279	3.0	350	4.1	343	6.7	375	0.67	34.0	(7.4)	335	18.1	185	8.7	322	7	374
835.4	266	14.5	34	21.7	10	81.0	6	6.48	–	–		11.6	239	–		5	375
253.5	379	2.5	369	3.9	350	12.5	308	0.91	18.2	28.2	7	13.2	223	28.6	37	6	376
468.2	336	4.8	252	6.2	244	11.1	330	8.13	15.3	5.5	238	30.3	112	16.5	210	7	377
343.9	360	4.0	303	3.3	373	2.8§	408	0.54	800.0	–		77.5	22	–		18	378
166.9	405	(60.5)	477	(79.8)	475	–		(43.54)	(1,276.8)	–		(33.8)	421	1.4	359	17	379
322.9	363	5.7	213	7.9	175	17.0	195	1.53**	(23.5)	–		(9.2)	371	–		7	380
251.9	380	3.3	335	6.0	260	14.2	269	1.42	3.6	12.8	102	2.7	319	21.4	110	1	381
N.A.		–		–		–		N.A.	–	–		–		–		8	382
1,126.9	214	10.4	72	14.8	39	24.0	73	1.38	29.0	21.1	24	35.2	84	30.1	25	22	383
223.4	391	3.2	341	6.0	263	19.7	143	3.00‡	(8.3)	–		95.2	13	–		17	384
1,703.6	165	20.7	8	15.8	31	23.1	83	4.99	7.3	42.5	2	(14.1)	392	28.6	36	6	385
1,024.6	227	1.2	414	1.0	422	3.5	403	0.31	(79.3)	(6.4)	331	(4.3)	355	23.7	81	20	386
N.A.		–		–		–		N.A.	–	–		–		–		5	387
369.3	354	5.8	203	7.6	186	28.2	47	1.85**	117.6	36.1	4	66.2	33	22.8	91	17	388
3,499.2	87	19.9	11	27.1	7	39.3	23	0.96	57.4	27.3	10	(16.7)	399	40.7	3	19	389
130.3	415	2.3	381	3.5	366	11.6	322	3.12	17.7	7.0	208	25.5	134	19.9	136	25	390
531.8	321	5.5	219	9.3	129	15.9	224	2.01	33.1	19.1	35	59.5	36	38.3	6	21	391
564.6	313	5.9	200	10.0	102	21.8	104	1.23	56.3	14.6	81	1.3	326	28.3	38	8	392
33.0	432	(5.1)	461	(8.1)	463	(59.8)	445	(4.07)	–	–		(23.5)	414	(7.9)	371	24	393
406.4	347	5.2	235	7.2	199	14.6	258	2.35	7.3	3.7	268	(0.5)	334	15.3	227	9	394
1,021.3	229	(4.6)	460	(2.3)	452	(6.8)	428	(1.08)	(235.0)	–		(3.6)	351	10.4	303	16	395
566.9	312	3.8	309	6.8	217	15.5	238	1.67	19.3	6.1	227	106.4	10	20.3	130	8	396
598.7	306	18.0	18	25.3	8	59.1	11	N.A.	–	–		–		–		18	397
533.3	320	6.3	179	10.3	97	18.0	181	1.82	34.8	26.3	12	5.4	289	26.8	48	10	398
457.3	338	7.2	143	7.8	182	18.4	168	2.51	70.7	18.6	41	24.5	141	17.4	192	9	399
375.3	353	(12.0)	470	(22.9)	472	(101.9)	447	(1.46)	(247.5)	–		(25.[illegible])	416	–		6	400

RANK 1988	RANK 1987	COMPANY	SALES $ Millions	SALES % change from 1987	PROFITS $ Millions	PROFITS Rank	PROFITS % change from 1987	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank
401	377	**INTERNATIONAL CONTROLS** Kalamazoo, Mich.	703.8¶	(7.4)	(10.8)	443	–	507.5	401	13.1	467
402	416	**AMETEK** New York	701.5¶	13.1	30.6	352	(25.7)	448.3	421	180.9	390
403	•	**STERLING CHEMICALS** Houston[4]	699.0	69.2	213.1	134	349.7	294.2	470	90.6	436
404	441	**KELLWOOD** St. Louis[16]	698.2	22.1	30.2	355	19.6	400.0	440	164.3	399
405	432	**PHILIPS INDUSTRIES** Dayton[24]	692.5	16.8	43.3	315	31.0	353.4	452	213.4	376
406	•	**LONE STAR TECHNOLOGIES** Dallas	688.1	66.8	(24.8)	451	–	3,928.4	105	313.6	319
407	•	**IMO INDUSTRIES** Lawrenceville, N.J.	687.2	86.5	28.3	360	40.5	756.0	338	294.9	329
408	431	**H.B. FULLER** St. Paul[32]	685.0	14.7	21.1	383	(18.3)	434.3	429	178.9	392
409	436	**LESLIE FAY** New York	682.7	17.3	22.3	379	12.7	363.0	450	133.8	420
410	449	**HARVARD INDUSTRIES** Farmingdale, N.J.[6]	680.1	21.7	14.0	404	(24.8)	345.0	455	80.7	443
411	427	**MEREDITH** Des Moines[4]	678.5	13.3	47.4	305	39.6	646.1	362	361.6	296
412	•	**GAYLORD CONTAINER** Deerfield, Ill.[6]	671.2	–	41.5	320	–	805.4	324	141.1	412
413	405	**STANDARD REGISTER** Dayton	669.4	1.5	38.1	329	(6.0)	443.8	422	294.3	331
414	•	**SSMC** Shelton, Conn.	668.4	–	(15.5)	444	–	N.A.		N.A.	
415	•	**VALMONT INDUSTRIES** Valley, Nebr.	662.7	49.0	15.3	398	85.3	253.4	479	79.1	446
416	411	**NERCO** Portland, Ore.	661.8	4.7	66.5‡	271	10.6	1,205.8	254	398.8	281
417	429	**OHIO MATTRESS** Tukwila, Wash.[33]	661.5	10.6	33.2	346	42.2	542.5	390	261.9	347
418	422	**HANDY & HARMAN** New York	658.1	8.3	9.7	417	26.7	466.1	415	117.6	427
419	428	**COLEMAN** Wichita, Kans.	657.9	9.9	24.5	372	27.6	435.1	427	203.3	378
420	420	**WARNACO** Los Angeles	657.3	7.9	(5.1)	436	–	653.0	360	(43.2)	475
421	443	**LONGVIEW FIBRE** Longview, Wash.[7]	657.2	15.4	96.3	224	47.8	635.5	365	353.1	302
422	424	**CALMAT** Los Angeles	655.3	8.8	56.4	293	(27.8)	764.9	332	481.6	256
423	454	**APOLLO COMPUTER** Chelmsford, Mass.	653.5	18.0	2.1**	429	(90.4)	496.7	406	226.4	369
424	478	**MEDTRONIC** Minneapolis[16]	653.3	30.1	86.5	241	17.2	640.8	364	395.9	283
425	•	**LPL INVESTMENT GROUP** Wallingford, Conn.	650.6¶	66.3	9.3	418	80.5	707.6	347	44.4	461
426	418	**BUTLER MANUFACTURING** Kansas City, Mo.	645.6	5.0	15.3	397	312.1	266.2	477	123.9	424
427	440	**XIDEX** Santa Clara, Calif.[4]	637.0	11.2	(82.1)	468	–	593.3	374	298.0	326
428	433	**TEXAS INDUSTRIES** Dallas[8]	635.3	7.9	13.1	406	941.7	662.1	357	196.6	383
429	•	**FINEVEST FOODS** Greenwich, Conn.	634.6	–	3.4	428	–	213.1	486	60.5	457
430	466	**RICELAND FOODS** Stuttgart, Ark.[18]	633.0	20.7	N.A.		–	279.7	474	143.1	411
431	484	**TRINITY INDUSTRIES** Dallas[34]	632.9	28.9	13.0	407	224.7	578.7	379	201.2	381
432	442	**SHAKLEE** San Francisco	627.5	9.7	27.2	364	15.8	434.5	428	269.0	343
433	465	**MILLIPORE** Bedford, Mass.	621.9	17.6	54.5	296	14.3	576.1	382	365.5	293
434	•	**NACCO INDUSTRIES** Cleveland	616.5	34.4	45.0	309	32.4	837.0	316	246.0	358
435	480	**GREAT LAKES CHEMICAL** West Lafayette, Ind.	616.0	23.0	103.3	215	86.0	663.8	355	482.2	255
436	437	**HUBBELL** Orange, Conn.	614.2	5.7	71.3	262	14.0	523.5	393	392.5	284
437	457	**COMMERCE CLEARING HOUSE** Riverwoods, Ill.	612.4	11.0	49.5	303	(6.3)	578.3	380	215.4	375
438	469	**TORO** Bloomington, Minn.[18]	609.2	16.9	20.0	386	17.7	268.2	476	82.0	441
439	•	**MAGMA COPPER** San Manuel, Ariz.	607.1	49.6	56.3	294	–	890.4	304	389.6	286
440	445	**UST** Greenwich, Conn.	606.7	7.5	162.1	158	23.9	598.0	372	453.3	265
441	438	**DIXIE YARNS** Chattanooga, Tenn.	606.4	4.5	21.5	381	(18.3)	343.4	456	203.9	377
442	477	**LUKENS** Coatesville, Pa.	605.3	20.4	33.4	345	54.1	353.1	453	181.3	389
443	471	**ALBERTO CULVER** Melrose Park, Ill.[6]	604.7	17.5	26.9	366	48.1	303.3	467	134.7	418
444	•	**MINISCRIBE** Longmont, Colo.	603.3	66.4	25.9	369	(17.0)	401.8	408	131.9	422
445	•	**SOUTHDOWN** Houston	600.4	–	56.7**	292	–	1,210.8	253	354.1	300
446	447	**REYNOLDS & REYNOLDS** Dayton[6]	600.1	6.6	26.1	368	23.0	398.7	441	201.9	379
447	383	**BELL & HOWELL** Skokie, Ill.	600.0[28]	–	N.A.		–	N.A.		N.A.	
448	448	**NATIONAL COOP. REFINERY** McPherson, Kans.[4]	599.8	6.8	N.A.		–	304.9	466	135.7	417
449	498	**A. SCHULMAN** Akron[24]	597.7	28.9	27.6	362	39.5	240.5	480	145.2	409
450	410	**JOSTENS** Minneapolis[4]	595.7	(6.7)	88.8	236	98.5	407.2	436	175.7	395

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE		PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS					RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from	1978-88 annual growth rate		1988		1978-88 annual average		INDUSTRY TABLE NUMBER	
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$	1987	%	Rank	%	Rank	%	Rank		1988
N.A.		(1.5)	448	(2.1)	451	(82.5)	446	(2.93)	–	–		–		–		17	401
593.7	307	4.4	279	6.8	218	16.9	200	0.70	(25.5)	4.2	257	4.2	303	18.4	164	7	402
1,035.0	226	30.5	2	72.4	1	235.3	1	3.55	181.7	–		–		–		5	403
327.8	362	4.3	284	7.6	189	18.4	171	2.61	18.6	4.0	262	30.3	113	24.2	76	2	404
560.1	315	6.2	180	12.2	65	20.3	131	1.52	29.9	18.2	46	9.8	247	37.6	8	11	405
205.0	394	(3.6)	459	(0.6)	437	(7.9)	429	(1.24)	(4,233.3)	–		(9.7)	377	–		14	406
344.6	359	4.1	297	3.7	356	9.6	354	1.78	150.7	–		34.1	92	–		11	407
241.6	384	3.1	346	4.9	320	11.8	318	2.20	(18.2)	10.8	149	(24.2)	415	20.6	128	5	408
243.3	383	3.3	338	6.1	248	16.6	212	1.17	13.6	59.6	1	68.2	32	–		2	409
N.A.		2.1	387	4.1	346	17.4	187	0.80	(24.5)	–		–		–		17	410
605.2	303	7.0	154	7.3	196	13.1	295	2.48	40.1	12.0	121	3.5	313	23.6	83	20	411
194.8	396	6.2	181	5.2	299	28.8§	44	3.06	–	–		–		–		9	412
528.6	323	5.7	211	8.6	155	12.9	300	1.28	(5.9)	26.6	11	(17.3)	401	28.6	35	20	413
238.8	385	(2.3)	455	–		–		N.A.	–	–		15.8	200	–		7	414
159.0	406	2.3	376	6.0	257	19.3	150	2.75	79.2	22.6	18	129.6	5	26.4	57	7	415
543.1	318	10.0	80	5.5	279	16.7	209	1.99‡	10.6	–		5.1	291	–		16	416
828.6	269	5.0	241	6.1	249	12.7	304	1.00	30.4	20.3	26	107.3	9	36.5	10	10	417
280.3	378	1.5	406	2.1	395	8.2	365	0.70	27.3	(3.1)	322	14.0	215	11.5	290	15	418
485.1	332	3.7	313	5.6	276	12.0	314	3.47	27.6	3.5	273	31.4	108	15.5	223	11	419
N.A.		(0.8)	439	(0.8)	441	–		(5.19)	–	–		–		–		2	420
744.5	277	14.7	32	15.2	38	27.3	54	8.71	48.4	16.6	55	56.4	42	16.6	206	9	421
830.8	267	8.6	114	7.4	193	11.7	320	1.82	(28.1)	1.7	288	7.6	272	14.0	251	4	422
289.0	377	0.3	428	0.4	427	0.9	417	0.06**	(90.0)	–		(30.0)	420	–		6	423
1,084.8	219	13.2	40	13.5	51	21.9	103	6.32	20.4	18.6	39	(15.7)	397	19.0	154	22	424
80.8	429	1.4	409	1.3	416	20.9	118	1.34	116.1	–		11.8	238	–		7	425
170.6	401	2.4	372	5.8	270	12.4	310	3.41	342.9	(1.7)	313	5.0	293	5.9	345	14	426
N.A.		(12.9)	471	(13.8)	467	(27.5)	441	N.A.	–	–		–		–		6	427
302.9	372	2.1	389	2.0	400	6.6	376	1.09	–	(4.2)	326	16.0	198	12.1	279	15	428
98.0	425	0.5	422	1.6	410	5.6	390	0.36	(50.0)	–		–		–		8	429
N.A.		–		–		–		N.A.	–	–		–		–		8	430
602.6	305	2.1	386	2.3	393	6.5	379	0.74	196.0	(2.5)	321	33.0	96	24.7	72	27	431
502.0	330	4.3	282	6.3	239	10.1	344	2.05	15.8	2.8	278	56.1	43	18.7	161	19	432
878.6	261	8.8	110	9.5	119	14.9	251	1.96	15.3	10.7	151	(6.4)	366	10.3	304	21	433
313.8	368	7.3	141	5.4	285	18.3	175	5.08	35.5	18.5	42	35.1	85	19.3	145	11	434
1,158.1	209	16.8	21	15.6	34	21.4	111	5.93	83.0	20.0	30	9.2	253	19.0	153	5	435
944.0	247	11.6	57	13.6	50	18.1§	178	2.61	14.7	12.1	118	9.3	252	23.8	80	7	436
925.4	250	8.1	125	8.6	157	23.0	87	2.75	(6.1)	14.5	83	(20.9)	410	19.8	137	20	437
196.0	395	3.3	337	7.5	191	23.0§	86	1.84	21.1	3.0	276	29.5	116	6.2	342	11	438
205.6	393	9.3	98	6.3	237	14.5	262	1.50	–	–		–		–		15	439
2,468.8	118	26.7	3	27.1	6	35.8	25	1.41	25.3	18.3	43	58.8	39	29.1	33	25	440
235.8	388	3.5	323	6.3	240	10.5	337	1.80	(25.6)	10.0	161	18.4	183	–		24	441
251.4	381	5.5	217	9.5	120	18.4	169	3.91	51.6	9.0	179	(14.0)	391	14.4	241	15	442
417.5	346	4.4	273	8.9	142	20.0	134	1.99	55.5	23.7	17	78.8	20	34.1	15	23	443
100.6	424	4.3	290	5.3	290	19.6	146	0.65	(20.7)	–		(18.4)	403	–		6	444
323.9	363	9.4	93	4.7	327	(174.6)	452	3.72**	15.2	9.9	165	17.7	186	14.1	247	4	445
297.9	373	4.3	280	6.5	227	12.9	302	2.43	27.2	6.6	217	50.5	52	9.6	314	20	446
N.A.		–		–		–		N.A.	–	–		–		–		22	447
N.A.		–		–		–		N.A.	–	–		–		–		18	448
395.1	349	4.6	261	11.5	73	19.0	155	3.09	39.8	19.0	37	16.4	193	34.0	16	5	449
688.7	285	14.9	30	21.8	9	50.5	12	2.48	103.3	19.1	34	6.9	275	21.5	109	12	450

THE FORTUNE

LARGEST U.S. INDUSTRIAL

451-500

RANK		COMPANY	SALES		PROFITS			ASSETS		STOCKHOLDERS' EQUITY	
1988	1987		$ Millions	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank	$ Millions	Rank
451	417	**WESTMORELAND COAL** Philadelphia	593.5	(3.8)	1.5	433	–	386.4	445	139.3	415
452	425	**THORN APPLE VALLEY** Southfield, Mich.[8]	593.2	(1.4)	5.4**	425	414.8	103.0	489	33.9	464
453	467	**FABERGE** New York[29]	593.0	13.1	1.6	432	(94.0)	1,159.0	257	107.4	429
454	•	**AVONDALE INDUSTRIES** Avondale, La.	592.4	(13.5)	4.4	426	(3.3)	419.3	435	222.4	373
455	346	**FAIRCHILD INDUSTRIES** Chantilly, Va.	591.9	(34.0)	27.0**	365	16.9	441.1	425	79.2	445
456	455	**OXFORD INDUSTRIES** Atlanta[6]	590.6	6.7	(9.8)	442	(191.9)	223.0	484	103.7	430
457	461	**GUILFORD MILLS** Greensboro, N.C.[4]	578.3	7.3	26.7	367	11.7	379.3	446	191.7	386
458	481	**ALLIED PRODUCTS** Chicago	577.5	16.2	5.5	424	–	476.6	413	135.8	416
459	453	**HON INDUSTRIES** Muscatine, Iowa	575.3	3.6	35.3	341	42.5	275.9	475	147.5	406
460	285	**MAXUS ENERGY** Dallas	574.9	(52.8)	(131.6)	470	–	1,719.8	208	25.4	466
461	•	**P.H. GLATFELTER** Spring Grove, Pa.	569.3	–	82.2	248	–	663.0	356	335.8	310
462	460	**CARLISLE** Cincinnati	567.4	4.5	17.4	394	(7.5)	325.4	459	191.0	387
463	472	**PHILLIPS-VAN HEUSEN** New York[29]	567.2	10.3	30.0	356	49.3	317.8	464	95.3	435
464	•	**CONSTAR INTERNATIONAL** Chattanooga	565.7	24.4	14.1	403	45.6	230.0	481	81.3	442
465	462	**TAMBRANDS** Lake Success, N.Y.	563.3	4.5	85.3	245	11.3	465.3	416	352.9	303
466	434	**MITCHELL ENERGY** The Woodlands, Tex.[29]	561.9	(4.4)	8.8	420	3.9	2,112.1	178	561.9	235
467	464	**JEPSON** Elmhurst, Ill.	560.1	5.7	12.8	408	(29.8)	301.9	468	73.9	451
468	•	**UIS** New York	560.0	8.4	35.5	339	63.7	324.9	460	245.5	359
469	490	**CARPENTER TECHNOLOGY** Reading, Pa.[4]	555.5	15.6	24.3	373	441.7	635.0	366	307.3	323
470	•	**DIBRELL BROTHERS** Danville, Va.[4]	555.0	80.1	12.7	409	–	290.1	472	63.8	453
471	468	**SUN-DIAMOND GROWERS** Pleasanton, Calif.[18]	553.8	5.8	N.A.		–	282.3	473	98.8	432
472	•	**BORDEN CHEMICALS & PLASTICS** Geismar, La.	553.0	–	121.0	194	–	604.8	370	363.3	294
473	•	**BANNER INDUSTRIES** Beachwood, Ohio[4]	547.6¶	48.2	(7.0)	440	(169.0)	1,065.9	278	86.9	437
474	474	**AMERICAN MAIZE-PRODUCTS** Stamford, Conn.	547.5	8.0	1.4	434	(88.7)	420.1	434	151.3	405
475	•	**J.P. INDUSTRIES** Ann Arbor, Mich.	547.4¶	41.6	14.8	400	0.2	464.1	418	121.5	426
476	476	**FOXBORO** Foxboro, Mass.	539.9	7.0	9.8	416	–	472.2	414	195.2	384
477	486	**AFFILIATED PUBLICATIONS** Boston	534.2	9.0	(80.9)	467	(140.2)	425.4	432	194.4	385
478	•	**SUDBURY** Cleveland[8]	531.7	54.6	11.3	412	0.5	387.3	444	79.3	444
479	426	**AVERY** New York[6]	531.7¶	(11.4)	(58.6)	461	–	406.6	437	7.8	469
480	491	**RUSSELL** Alexander City, Ala.	531.1	10.7	53.8	297	16.0	561.0	385	345.1	306
481	492	**KIMBALL INTERNATIONAL** Jasper, Ind.[4]	529.8	11.1	35.6	338	19.3	320.4	462	224.7	372
482	•	**GEORGE BANTA** Menasha, Wis.	526.8	74.2	23.1	378	35.3	370.3	449	166.1	398
483	470	**BIG THREE INDUSTRIES** Houston[50]	525.0[28]	1.3	N.A.		–	N.A.		N.A.	
484	487	**NOXELL** Hunt Valley, Md.	521.6	6.6	51.0	301	17.1	330.0	458	246.8	357
485	•	**MAXXAM** Los Angeles[51]	519.2	–	17.5	393	–	3,635.0	111	103.0	431
486	348	**MINSTAR** Minneapolis	518.2	(40.9)	14.6	401	–	374.0	447	(184.0)	478
487	495	**SPRAGUE TECHNOLOGIES** Stamford, Conn.	517.3	10.1	13.2	405	266.7	501.1	403	329.0	313
488	•	**POPE & TALBOT** Portland, Ore.	515.0	20.6	31.9	349	13.6	319.4	463	162.2	400
489	•	**THOMAS & BETTS** Bridgewater, N.J.	514.6	17.9	58.6	289	20.9	492.9	407	314.8	317
490	•	**PRAIRIE FARMS DAIRY** Carlinville, Ill.[6]	512.0	8.3	N.A.		–	134.1	487	83.1	440
491	•	**DR PEPPER/SEVEN-UP** Dallas	510.3[28]	–	N.A.		–	736.1	341	N.A.	
492	482	**SCIENTIFIC-ATLANTA** Atlanta[4]	508.6	2.7	29.7	358	22.3	316.3	465	237.3	363
493	497	**STANDARD PRODUCTS** Cleveland[4]	508.3	9.3	34.1	342	8.0	255.2	478	145.8	408
494	451	**H.H. ROBERTSON** Pittsburgh	508.0¶	(8.7)	(28.3)	455	(1,218.3)	296.1	469	78.9	447
495	479	**GROW GROUP** New York[4]	506.8¶	1.0	.0	435	(97.3)	223.3	483	61.2	456
496	•	**PILGRIM'S PRIDE** Pittsburg, Tex.[6]	506.4	20.1	1.7	430	(83.5)	291.2	471	68.2	452
497	•	**MOLEX** Lisle, Ill.[4]	502.4	29.9	59.3	287	36.5	499.0	405	389.7	285
498	489	**CAMERON IRON WORKS** Houston[4]	501.6	3.4	(5.4)	437	–	757.4	334	340.0	309
499	•	**NCH** Irving, Tex.[16]	500.8	17.4	30.0	357	53.1	343.0	457	180.3	391
500	•	**CHEMED** Cincinnati	500.6	28.0	24.1**	374	18.5	322.7	461	111.2	428
		TOTALS	2,023,135.0		114,960.1			2,078,811.6		697,999.9	

The definitions, explanations, and footnotes underlying the figures in this directory are on page 376.

MARKET VALUE $ Millions	Rank	PROFITS AS PERCENT OF SALES %	Rank	ASSETS %	Rank	STOCKHOLDERS' EQUITY %	Rank	EARNINGS PER SHARE 1988/$	% change from 1987	1978-88 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1988 %	Rank	1978-88 annual average %	Rank	INDUSTRY TABLE NUMBER	RANK 1988
129.9	416	0.3	432	0.4	429	1.1	415	0.18	–	(1.0)	309	(17.6)	402	(3.9)	367	16	451
N.A.		0.9	418	5.2	298	15.8§	230	1.50**	417.2	19.0	36	–		–		8	452
N.A.		0.3	429	0.1	432	(0.1)	422	N.A.	–	–		–		–		23	453
240.4	382	0.7	420	1.0	421	2.0	413	0.22	–	–		–		–		27	454
188.8	397	4.6	268	6.1	251	24.7§	64	1.37**	63.1	(3.9)	325	80.7	18	7.2	332	7	455
115.5	421	(1.7)	451	(4.4)	458	(9.4)	433	(0.93)	(197.9)	–		0.1	331	21.0	120	2	456
308.8	370	4.6	264	7.0	208	13.9	277	2.63	16.4	10.8	148	(2.9)	347	27.1	47	24	457
85.2	428	0.9	417	1.1	420	2.7§	409	0.74	–	11.0	144	21.0	166	9.3	316	11	458
366.2	355	6.1	186	12.8	57	23.9	74	1.89	52.4	10.2	158	(5.5)	361	13.6	257	10	459
673.8	289	(22.9)	474	(7.7)	455	(633.5)	455	(1.99)	–	–		(1.1)	338	(1.3)	364	16	460
[illegible]81.4	239	14.4	35	12.4	64	24.5	66	3.40	51.1	18.3	45	26.5	124	29.9	28	9	461
292.9	376	3.1	348	5.3	287	9.1	358	2.16	(4.0)	3.8	266	25.2	137	23.3	86	21	462
158.4	407	5.3	226	9.4	121	31.5	34	1.97	54.9	–		44.7	63	21.5	108	2	463
133.5	414	2.5	368	6.1	253	17.3	191	2.25	54.1	6.4	219	25.8	131	17.4	193	21	464
1,359.7	192	15.1	29	18.3	20	24.2	70	3.83	11.0	9.9	164	12.9	230	21.4	113	9	465
666.8	291	1.6	402	0.4	428	1.6	414	0.19	5.6	(12.1)	343	13.3	222	11.3	294	16	466
188.2	398	2.3	377	4.3	340	17.4	189	0.68	(32.7)	–		75.6	23	–		11	467
N.A.		6.3	173	10.9	81	14.5	260	N.A.	–	–		–		–		17	468
451.8	340	4.4	278	3.8	354	7.9	367	2.67	434.0	(3.9)	324	12.0	235	11.4	291	15	469
128.9	417	2.3	378	4.4	338	19.9	135	3.78	–	16.1	58	48.3	57	30.6	24	25	470
N.A.		–		–		–		N.A.	–	–		–		–		8	471
N.A.		21.9	6	20.0	13	33.3	29	N.A.	–	–		–		–		5	472
143.2	413	(1.3)	446	(0.7)	438	(8.1)	430	(1.52)	(212.9)	–		69.4	29	10.0	309	14	473
107.0	422	0.3	430	0.3	430	0.9	416	0.22	(89.5)	(16.3)	345	28.8	120	12.6	271	8	474
167.4	404	2.7	361	3.2	378	12.2	311	1.35	2.3	–		(2.7)	344	–		11	475
380.2	352	1.8	395	2.1	396	5.0	395	0.80	–	(11.2)	342	34.5	88	6.0	344	22	476
2,979.0	102	(15.1)	472	(19.0)	471	(41.6)	444	(1.17)	(140.8)	–		32.9	97	47.0	2	20	477
86.5	427	2.1	385	2.9	385	14.3	266	0.86	(31.7)	–		(28.6)	419	–		17	478
N.A.		(11.0)	468	(14.4)	468	(754.2)	456	(4.94)	–	–		–		–		5	479
827.7	270	10.1	78	9.6	114	15.6	232	1.36	16.2	13.7	94	32.2	99	26.1	61	24	480
357.8	358	6.7	162	11.1	78	15.9	228	1.68	19.6	10.4	153	(11.2)	382	18.4	163	10	481
294.7	374	4.4	277	6.2	241	13.9	278	1.46	–	12.7	107	70.3	27	30.7	23	20	482
N.A.		–		–		–		N.A.	–	–		–		–		5	483
829.0	268	9.8	85	15.5	35	20.7	121	1.26	16.7	17.2	50	(7.4)	368	28.6	34	23	484
236.8	386	3.4	330	0.5	426	17.0	197	1.95	875.0	10.0	160	204.7	2	17.5	189	15	485
N.A.		2.8	358	3.9	351	–		1.76	–	7.7	198	–		–		27	486
222.6	392	2.6	365	2.6	389	4.0	401	0.72	300.0	–		26.0	127	–		7	487
232.9	390	6.2	184	10.0	101	19.7	139	2.68	15.0	18.6	40	2.8	318	15.7	221	9	488
817.8	272	11.4	60	11.9	68	18.6	164	3.46	20.1	7.7	197	(6.1)	364	12.4	273	7	489
N.A.		–		–		–		N.A.	–	–		–		–		8	490
N.A.		–		–		–		N.A.	–	–		–		–		3	491
357.8	357	5.8	204	9.4	125	12.5	309	1.25	20.2	13.7	95	17.7	187	10.1	308	7	492
305.6	371	6.7	163	13.3	53	23.4	80	3.14	13.4	25.0	14	36.7	79	31.8	20	21	493
65.6	431	(5.6)	463	(9.6)	465	(35.9)	442	(4.58)	(1,305.3)	–		(41.8)	425	(0.4)	362	14	494
143.9	412	0.0	435	0.0	435	0.1	421	(0.07)	(275.0)	–		83.5	16	16.2	213	5	495
155.3	408	0.3	426	0.6	425	2.5	410	0.08	(82.6)	–		51.6	48	–		8	496
866.4	263	11.8	55	11.9	69	15.2	244	2.34	36.0	20.3	27	5.5	287	20.7	126	7	497
602.8	304	(1.1)	442	(0.7)	439	(1.6)	423	(0.35)	–	–		36.6	80	2.6	353	11	498
392.2	351	6.0	191	8.7	148	16.6	211	3.29	55.2	6.8	212	8.3	263	15.2	228	5	499
310.7	369	4.8	254	7.5	192	21.7	107	2.60**	14.0	2.8	279	3.0	315	12.6	270	5	500
1,290,872.6																	

DEFINITIONS AND EXPLANATIONS

SALES

All companies on the list must have derived more than 50% of their sales from manufacturing and/or mining. Sales exclude nonoperating revenues but include sales of subsidiaries if they are consolidated. Sales from discontinued operations are included if these figures are published. If the sales are at least 10% higher for this reason, there is a symbol (¶) next to the sales figure. All figures are for the year ended December 31, 1988, unless otherwise noted. Sales figures do not include excise taxes collected by manufacturers, and so the figures for some corporations—most of which sell gasoline, liquor, or tobacco—may be lower than those published by the corporations themselves. If they are at least 5% lower for this reason, there is an asterisk (*) next to the sales figures.

PROFITS

Profits are shown after taxes and after extraordinary credits or charges if any are shown on the income statement. A double asterisk (**) signifies an extraordinary credit reflecting at least 10% of the profits shown, a double dagger (‡) an extraordinary charge of at least 10%. Figures in parentheses indicate a loss. Profit declines over 100% reflect swings from 1987 profits to 1988 losses. Cooperatives provide only "net margin" figures, which are not comparable with the profits figures in these listings, and therefore N.A. is shown in that column.

ASSETS

Assets shown are those at the company's fiscal year-end.

STOCKHOLDERS' EQUITY

Stockholders' equity is the sum of capital stock, surplus, and retained earnings at the company's year-end. Redeemable preferred stock is excluded if its redemption is either mandatory or outside the control of the company, except in the case of cooperatives. For purposes of calculating "profits as percent of stockholders' equity," any dividends paid on redeemable preferred stock, if that stock's redemption is either mandatory or outside the control of the company, have been subtracted from the profit figure.

MARKET VALUE

The figure shown was arrived at by multiplying the number of common shares outstanding (at the latest date available) by the price per common share as of March 10, 1989.

EARNINGS PER SHARE

For all companies the figures shown are the primary earnings per share that appear on the company's income statement. Per share earnings for 1987 and 1978 are adjusted for stock splits and stock dividends. They are not restated for mergers, acquisitions, or accounting changes made after 1978. A double asterisk (**) signifies an extraordinary credit reflecting at least 10% of the profit shown, a double dagger (‡) an extraordinary charge of at least 10%. Results are listed as not available (N.A.) if the companies are cooperatives, joint ventures, or wholly owned subsidiaries of other companies, or if the figures were not published in 1978. The growth rate is the average annual growth, compounded.

TOTAL RETURN TO INVESTORS

Total return to investors includes both price appreciation and dividend yield to an investor in the company's stock. The figures shown assume sales at the end of 1988 of stock owned at the end of 1978 and 1987. It has been assumed that any proceeds from cash dividends, the sale of rights and warrant offerings, and stock received in spinoffs were reinvested when they were paid. Returns are adjusted for stock splits, stock dividends, recapitalizations, and corporate reorganizations as they occur; however, no effort has been made to reflect the cost of brokerage commissions or of taxes. Results are listed as not available (N.A.) if shares are not publicly traded or are traded on only a limited basis. If companies have more than one class of shares outstanding, only the more widely held and actively traded has been considered. Total return percentages shown are the returns received by the hypothetical investor described above. The ten-year figures are annual averages, compounded.

INDUSTRY TABLES

Industry table numbers used in the directory indicate the groups in which companies are placed in "The 500 by Industry, Ranked by 11 Measures," beginning on page 380. Companies are included in the industry that represents the greatest volume of their industrial sales. Industry groups are based on categories established by the U.S. Office of Management and Budget and issued by the Federal Statistical Policy and Standards Office. The median figures in the tables refer only to results of companies in the 500; no attempt has been made to calculate medians in groups with fewer than four companies.

Most of the figures in this FORTUNE 500 Directory were prepared by Reed Abelson and Rahul Jacob, who are responsible for the columns reporting on companies' sales, assets, profits, and stockholders' equity, and the industry table numbers. Figures on market value, earnings per share, and total return to investors were prepared by Claudine Knight and Kathleen Smyth.

FOOTNOTES TO THE 500

- ● Indicates that a company was not among the 500 in 1987.
- * Does not include excise taxes; see the explanation of "sales" above.
- ** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" above.
- N.A. Not available.
- ‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and "earnings per share" above.
- ¶ Includes sales from discontinued operations of at least 10%; see the explanation of "sales" above.

1

[1] Figures include Roper (1987 rank: 389), acquired April 22, 1988.

[2] Figures include Kraft (1987 rank: 31), acquired December 7, 1988.

[3] Owned by Royal Dutch/Shell Group (1987 International 500 rank: 1).

[4] Figures are for fiscal year ended June 30, 1988.

[5] Figures include Sterling Drug (1987 rank: 174), acquired February 23, 1988.

[6] Figures are for fiscal year ended September 30, 1988.

[7] Figures are for fiscal year ended October 31, 1988.

[8] Figures are for fiscal year ended May 31, 1988.

[9] Figures are for fiscal year ended February 29, 1988.

10

[10] Owned by Unilever (1987 International 500 rank: 11).

[11] Name changed from Baxter Travenol Laboratories May 17, 1988.

[12] Owned by Hanson Trust (1987 International 500 rank: 62).

[13] Acquired by Grand Metropolitan (1987 International 500 rank: 75) January 3, 1989.

[14] Owned by Hoechst (1987 International 500 rank: 22).

[15] Owned by Philips' Gloeilampenfabrieken (1987 International 500 rank: 12).

[16] Figures are for fiscal year ended April 30, 1988.

[17] Owned by BASF (1987 International 500 rank: 17).

[18] Figures are for fiscal year ended July 31, 1988.

[19] Owned by Bayer (1987 International 500 rank: 21).

20

[20] Acquired by Pechiney (1987 International 500 rank: 99) January 12, 1989.

[21] Name changed from IC Industries December 1, 1988.

[22] Figures include Brockway (1987 rank: 306), acquired April 12, 1988.

[23] Name changed from Swift Independent October 25, 1988.

[24] Figures are for fiscal year ended August 31, 1988.

[25] Owned by Petrofina (1987 International 500 rank: 64).

[26] Owned by National Intergroup (1987 Service 500 rank: S6).

[27] Name changed from Jim Walter, January 7, 1988.

[28] FORTUNE estimate.

[29] Figures are for fiscal year ended January 31, 1988.

30

[30] Owned by Seagram (1987 International 500 rank: 288).

[31] Figures include J.P. Stevens (1987 rank: 220), acquired May 7,1988.

[32] Figures include Georgia Kraft (1987 rank: 473), acquired January 4, 1988.

[33] Figures are for fiscal year ended November 30, 1988.

[34] Figures are for fiscal year ended March 31, 1988.

[35] Owned by McDermott International (1987 International 500 rank: 202).

[36] Owned by Montedison (International 500 rank: 48).

[37] Figures include Computervision (1987 rank: 446), acquired February 5, 1988.

[38] Acquired by Maytag (rank: 216) January 26, 1989.

[39] Owned by Loews (1987 Service 500 rank: F15).

40

[40] Owned by Esselte (1987 International 500 rank: 333).

[41] Owned by Lafarge Coppée (1987 International 500 rank: 211).

[42] Owned by Saint-Gobain (1987 International 500 rank: 37).

[43] Owned by Jefferson Smurfit Group (1987 International 500 rank: 437).

[44] Name changed from York International December 19, 1988.

[45] Name changed from Deluxe Check Printers May 18, 1988.

[46] Acquired by Maxwell Communication (1987 International 500 rank: 436) December 16, 1988.

[47] Name changed from Telex June 28, 1988.

[48] Name changed from Sealed Power April 27, 1988.

[49] Name changed from Interstate Bakeries April 29, 1988, after merger.

50

[50] Owned by L'Air Liquide (1987 International 500 rank: 173).

[51] Figures include Kaisertech (1987 rank: 176), acquired October 28, 1988.

ARRIVALS AND DEPARTURES

NEWCOMERS TO THE 500

	SALES RANK
AVONDALE INDUSTRIES	454
BANNER INDUSTRIES	473
BANTA (GEO.)	482
BORDEN CHEMICALS & PLASTICS	472
BURLINGTON RESOURCES	194
CHEMED	500
DIAMOND SHAMROCK R&M	224
DIBRELL BROTHERS	470
DR PEPPER/SEVEN-UP	491
FINEVEST FOODS	429
GAYLORD CONTAINER	412
GLATFELTER (P.H.)	461
HENLEY GROUP	148
IMO INDUSTRIES	407
J.P. INDUSTRIES	475
LONE STAR TECHNOLOGIES	406
LPL INVESTMENT GROUP	425
MAGMA COPPER	439
MAXXAM	485
MINISCRIBE	444
MOLEX	497
NCH	499
PILGRIM'S PRIDE	496
POPE & TALBOT	488
PRAIRIE FARMS DAIRY	490
REXENE	397
SCRIPPS (E.W.)	293
SSMC	414
STANDARD COMMERCIAL	390
STERLING CHEMICALS	403
SUDBURY	478
THOMAS & BETTS	489
UIS	468
UNILEVER U.S.	63
VALHI	188
VALMONT INDUSTRIES	415

RETURNED TO THE 500

BERKSHIRE HATHAWAY (1958: 499)	205
CONSTAR INTERNATIONAL (1986: 491)	464
LORILLARD (1968: 255)	263
MCDERMOTT (1982: 108)	206
NACCO INDUSTRIES (1986: 461)	434
NATIONAL STEEL (1982: 127)	165
SHELLER-GLOBE (1986: 465)	368
SOUTHDOWN (1974: 486)	445
WARNER COMMUNICATIONS (1983: 114)	109

DISPLACED FROM THE 500

	1987 SALES RANK
AFG INDUSTRIES [1]	488
ALLIS-CHALMERS	394
AMERICAN TEL. & TEL. [2]	8
BAIRNCO	412
BASSETT FURNITURE INDUSTRIES	494
BP AMERICA [1]	22
BROCKWAY [3]	306
CALIFORNIA & HAWAIIAN SUGAR [1]	435
CHESEBROUGH-POND'S [4]	304
CLEVELAND-CLIFFS	496
COLECO INDUSTRIES	475
COMPUTERVISION [5]	446
ECOLAB [2]	331
ENVIRODYNE INDUSTRIES	493
FIRESTONE TIRE & RUBBER [6]	112
FISHER SCIENTIFIC GROUP [7]	345
FOSTER WHEELER [1]	284
GENERAL CINEMA [2]	313
GEORGIA KRAFT [8]	473
GOULD [9]	278
HARCOURT BRACE JOVANOVICH [2]	268
HARTE-HANKS COMMUNICATIONS	452
HENLEY MANUFACTURING [7]	423
HOMESTAKE MINING	485
HOUSEHOLD MANUFACTURING [1]	321
ITT [2]	45
JOY TECHNOLOGIES	403
KAISERTECH [10]	176
KNOLL INTERNATIONAL [1]	191
KOPPERS [11]	224
KRAFT [12]	31
LEVER BROTHERS [4]	145
LIPTON (THOMAS J.) [4]	243
LIQUID AIR [1]	444
LONE STAR INDUSTRIES	376
M/A-COM	459
NATIONAL STARCH & CHEMICAL [4]	287
NEWMONT MINING	450
NL INDUSTRIES [13]	253
PULLMAN [1]	413
ROPER [14]	389
SINGER	202
STANADYNE [1]	458
STERLING DRUG [15]	174
STEVENS (J.P.) [16]	220

* Figures in parentheses indicate year and sales rank the last time the company was listed.

[1] Figures no longer made public.

[2] No longer classified as industrial.

[3] Acquired by Owens-Illinois (rank: 129) April 12, 1988.

[4] Consolidated into Unilever U.S.

[5] Acquired by Prime Computer (rank: 241) February 5, 1988.

[6] Acquired by Bridgestone (1987 International 500 rank: 120) May 5, 1988.

[7] Consolidated into Henley Group.

[8] Acquired by Temple-Inland (rank: 200) January 4, 1988.

[9] Acquired by Nippon Mining (1987 International 500 rank: 162) November 1, 1988.

[10] Acquired by MAXXAM (rank: 485) October 28, 1988.

[11] Acquired by Beazer PLC of Bath, England, June 15, 1988.

[12] Acquired by Philip Morris (rank: 10) December 7, 1988.

[13] Acquired by Valhi (rank: 188) August 8, 1986.

[14] Acquired by General Electric (rank: 5) April 22, 1988.

[15] Acquired by Eastman Kodak (rank: 18) February 23, 1988.

[16] Acquired by West Point–Pepperell (rank: 195) May 7, 1988.

THE MONEY LOSERS

	SALES RANK	LOSS
LTV	56	**$3,153,600,000**
MANVILLE	190	**1,314,300,000**
EAGLE-PICHER INDUSTRIES	379	**465,800,000**
HONEYWELL	60	**434,900,000**
AVON PRODUCTS	132	**404,500,000**
COMBUSTION ENGINEERING	131	**245,200,000**
COOPER COS.	349	**207,400,000**
MAXUS ENERGY	460	**131,600,000***
ATARI	400	**84,800,000**
XIDEX	427	**82,100,000***
AFFILIATED PUBLICATIONS	477	**80,900,000**
NATIONAL GYPSUM	292	**79,600,000***
SUNDSTRAND	251	**76,600,000**
YORK HOLDINGS	290	**72,700,000**
CUMMINS ENGINE	135	**63,400,000**
OWENS-ILLINOIS	129	**59,000,000**
AVERY	479	**58,600,000***
FRUEHAUF	196	**56,500,000***
TRIANGLE INDUSTRIES	111	**54,300,000**
HENLEY GROUP	148	**47,000,000**
UNITED MER. & MFRS.	393	**37,000,000***
LOUISIANA LAND & EXPL.	395	**33,300,000**
H.H. ROBERTSON	494	**28,300,000**
IBC HOLDINGS	365	**27,300,000**
AMERICAN STANDARD	123	**26,300,000**
ALLEGHENY INT'L	341	**25,100,000***
LONE STAR TECHNOLOGIES	406	**24,800,000***
BURLINGTON HOLDINGS	174	**23,800,000**
POLAROID	218	**22,600,000**
AM INTERNATIONAL	280	**20,400,000**
MOHASCO	373	**18,100,000**
TEKTRONIX	261	**16,700,000**
DATA GENERAL	272	**15,500,000***
SSMC	414	**15,500,000**
INT'L CONTROLS	401	**10,800,000**
OXFORD INDUSTRIES	456	**9,800,000**
ANCHOR GLASS CONTAINER	340	**8,500,000**
BANNER INDUSTRIES	473	**7,000,000**
MEMOREX TELEX	358	**6,500,000**
AMSTAR	325	**5,700,000**
CAMERON IRON WORKS	498	**5,400,000***
WARNACO	420	**5,100,000***

*Also lost money in 1987.

RANKED WITHIN INDUSTRY BY 11 MEASURES

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
		$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	1978-88 annual growth rate %	Rank	1978-88 annual average %	Rank	1988 %	Rank	Number	Rank	% change from 1987
1	**AEROSPACE** 17 COMPANIES																							
	UNITED TECHNOLOGIES 16	18,088	1	5	10	659	2	11	9	4	7	5	8	14	7	6	8	12	13	26	4	186,800	1	(2)
	BOEING 19	16,962	2	10	6	614	4	28	4	4	8	5	9	11	8	6	9	15	6	68	2	147,300	2	8
	MCDONNELL DOUGLAS 25	15,072	3	15	4	350	8	12	8	2	15	3	15	11	9	8	5	12	16	31	3	121,421	3	8
	ROCKWELL INT'L 28	11,946	4	(1)	14	812	1	28	5	7	1	9	4	22	3	17	2	22	1	19	9	112,200	4	(3)
	ALLIED-SIGNAL 29	11,909	5	3	11	463	5	(29)	14	4	6	5	10	14	5	1	12	12	15	21	7	109,550	5	(5)
	LOCKHEED 33	10,667	6	(6)	16	624	3	48	3	6	3	9	2	25	2	22	1	22	2	25	5	86,800	7	(13)
	GENERAL DYNAMICS 41	9,551	7	2	12	379	6	(13)	13	4	5	6	5	20	4	–		15	8	6	13	102,800	6	(2)
	TEXTRON 61	7,111	8	26	3	234	9	(9)	12	3	13	2	16	10	12	2	11	12	14	9	12	60,000	9	(2)
	NORTHROP 75	5,797	9	(4)	15	104	10	11	10	2	16	3	14	10	11	1	13	13	12	13	11	44,600	10	(7)
	MARTIN MARIETTA 77	5,727	10	11	5	359	7	56	2	6	2	11	1	30	1	15	3	21	4	(1)	15	67,500	8	(4)
	GRUMMAN 126	3,591	11	8	9	86	12	143	1	2	14	3	13	10	10	7	7	15	7	20	8	32,000	11	(5)
	GENCORP 204	2,049	12	(34)	17	70	13	(85)	15	3	11	6	7	–		4	10	14	9	(22)	16	15,600	13	11
	SEQUA 210	1,948	13	44	1	69	14	–		4	10	4	12	10	13	8	6	15	5	15	10	16,100	12	–
	COLT INDUSTRIES 234	1,656	14	1	13	91	11	21	6	5	4	9	3	–		–		–		–		15,200	14	(8)
	SUNDSTRAND 251	1,477	15	8	8	(77)	17	(321)	16	(5)	17	(5)	17	(13)	15	–		13	11	22	6	14,381	15	1
	ROHR INDUSTRIES 353	907	16	37	2	32	15	21	7	4	9	4	11	9	14	(2)	14	13	10	73	1	11,000	16	7
	KAMAN 381	767	17	9	7	25	16	5	11	3	12	6	6	14	6	13	4	21	3	3	14	6,391	17	(1)
	TOTAL	125,226				4,896																1,149,643		
	MEDIAN	5,797		8		234		12		4		5		11		7		14		19		60,000		(2)
2	**APPAREL** 9 COMPANIES																							
	VF 170	2,516	1	(2)	9	174	1	(3)	4	7	2	10	2	16	6	21	2	35	1	21	5	43,000	1	(12)
	CLAIBORNE (LIZ) 299	1,184	2	12	3	110	2	(4)	5	9	1	18	1	24	3	–		–		6	7	4,700	8	24
	HARTMARX 304	1,174	3	9	5	38	4	(8)	6	3	7	5	6	11	7	8	3	23	3	8	6	22,500	3	2
	FRUIT OF THE LOOM 333	1,005	4	(1)	8	68	3	–		7	3	4	7	26	2	–		–		28	4	23,400	2	19
	KELLWOOD 404	698	5	22	1	30	5	20	2	4	5	8	4	18	4	4	4	24	2	30	3	14,200	4	1
	LESLIE FAY 409	683	6	17	2	22	7	13	3	3	6	6	5	17	5	60	1	–		68	1	3,500	9	(30)
	WARNACO 420	657	7	8	6	(5)	8	–		(1)	8	(1)	8	–		–		–		–		11,663	6	(0)
	OXFORD INDUSTRIES 456	591	8	7	7	(10)	9	(192)	7	(2)	9	(4)	9	(9)	8	–		21	5	0	8	11,733	5	(3)
	PHILLIPS-VAN HEUSEN 463	567	9	10	4	30	6	49	1	5	4	9	3	32	1	–		22	4	45	2	8,000	7	–
	TOTAL	9,075				457																142,696		
	MEDIAN	698		9		30		(3)		4		6		18		14		23		24		11,733		1
3	**BEVERAGES** 8 COMPANIES																							
	PEPSICO 26	13,007	1	13	2	762	2	28	2	6	5	7	4	24	2	14	3	21	3	21	4	235,000	1	4
	ANHEUSER-BUSCH 46	8,924	2	8	6	716	3	16	4	8	4	10	3	23	3	20	1	26	1	(4)	6	41,118	2	(1)
	COCA-COLA 49	8,338	3	9	4	1,045	1	14	6	13	2	14	1	31	1	11	4	18	4	23	2	18,774	4	10
	COCA-COLA ENTERPRISES 121	3,874	4	16	1	153	5	73	1	4	6	3	6	8	6	–		–		6	5	22,000	3	2
	SEAGRAM (JOS. E.) 191	2,199	5	8	5	418	4	24	3	19	1	6	5	10	5	–		–		–		10,200	6	(4)
	COORS (ADOLPH) 249	1,522	6	13	3	47	7	(3)	7	3	7	3	7	4	7	(2)	5	7	5	22	3	10,500	5	8
	BROWN-FORMAN 320	1,067	7	(3)	7	103	6	15	5	10	3	11	2	23	4	15	2	21	2	69	1	5,600	7	(15)
	DR PEPPER/SEVEN-UP 491	510	8	–		–		–		–		–		–		–		–		–		842	8	–
	TOTAL	39,441				3,244																344,034		
	MEDIAN	3,037		9		418		16		8		7		23		14		21		21		14,637		2
4	**BUILDING MATERIALS** 15 COMPANIES																							
	AMERICAN STANDARD 123	3,716	1	8	6	(26)	11	(121)	8	(1)	10	(1)	10	(19)	8	–		–		–		34,100	2	(13)
	OWENS-ILLINOIS 129	3,572	2	(4)	12	(59)	12	–		(2)	12	(1)	12	(103)	9	–		–		–		46,500	1	–
	OWENS-CORNING FIBER. 151	2,831	3	(2)	11	189	2	(6)	4	7	6	12	1	–		0	7	23	1	36	4	17,600	5	(6)
	USG 152	2,811	4	(8)	13	125	3	(39)	7	4	8	7	6	–		4	4	10	6	(63)	10	15,300	7	(31)
	HILLSBOROUGH 171	2,507	5	5	9	–		–		–		–		–		–		–		–		13,000	8	(22)
	MANVILLE 190	2,209	6	7	8	(1,314)	14	–	10	(59)	14	(60)	14	(165)	11	–		(8)	8	217	1	18,600	4	–
	CORNING GLASS WORKS 198	2,122	7	2	10	211	1	2	3	10	1	7	5	14	3	5	2	14	4	53	2	26,300	3	3
	NORTEK 259	1,425	8	9	3	20	9	–		1	9	2	9	8	5	5	3	4	7	32	5	10,651	9	(11)
	NORTON 264	1,410	9	12	2	96	4	44	1	7	5	9	2	16	1	2	5	12	5	8	7	16,100	6	4
	LAFARGE 279	1,309	10	7	7	93	5	25	2	7	4	8	3	14	2	–		–		42	3	7,000	12	11
	CERTAINTEED 234	1,267	11	9	4	57	6	(8)	5	4	7	5	7	8	6	(1)	8	–		–		8,000	11	8
	NATIONAL GYPSUM 292	1,221	12	(12)	14	(80)	13	–		(7)	13	(5)	13	(103)	10	–		–		–		6,300	13	(33)

INDUSTRY TABLE NUMBER COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																						
	SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
									SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
	$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
ANCHOR GLASS 340	978	13	28	1	(9)	10	(143)	9	(1)	11	(1)	11	(11)	7	–		–		(48)	9	8,738	10	(12)
CALMAT 422	655	14	9	5	56	8	(28)	6	9	3	7	4	12	4	2	6	14	3	8	8	3,294	15	2
SOUTHDOWN 445	600	15	–		57	7	–		9	2	5	8	–		10	1	14	2	18	6	3,500	14	–
TOTAL	28,633				(584)																234,983		
MEDIAN	1,425		7		(57)		(18)		4		5		8		3		13		25		13,000		(9)

5 CHEMICALS 51 COMPANIES

COMPANY 500 RANK	Sales $ Mil.	Rank	% change from 1987	Rank	Profits $ Mil.	Rank	% change from 1987	Rank	Sales %	Rank	Assets %	Rank	Equity %	Rank	EPS %	Rank	1978-88 %	Rank	1988 %	Rank	Employees Number	Rank	% change from 1987
DU PONT (E.I.) DE NEMOURS 9	32,514	1	7	39	2,190	2	23	29	7	25	7	26	14	32	5	25	14	29	6	27	140,949	1	1
DOW CHEMICAL 21	16,682	2	25	12	2,398	1	93	10	14	10	15	9	33	8	15	8	19	13	0	33	55,500	3	5
UNION CARBIDE 50	8,324	3	20	17	662	3	185	5	8	21	8	23	36	6	9	16	20	12	24	10	43,902	6	2
MONSANTO 51	8,293	4	9	37	591	4	36	22	7	24	7	29	16	28	7	19	19	15	2	31	45,635	5	(8)
HANSON IND. NA 67	6,494	5	72	2	300	10	31	25	5	33	5	33	–		–		–		–		80,488	2	87
GRACE (W.R.) 69	6,199	6	23	15	234	12	35	23	4	40	4	41	15	29	3	29	14	30	14	17	45,700	4	16
HOECHST CELANESE 78	5,679	7	24	13	250	11	48	18	4	34	4	42	8	42	–		–		–		23,700	11	(2)
PPG INDUSTRIES 79	5,617	8	8	38	468	5	24	28	8	19	9	17	21	16	15	7	27	5	26	8	36,300	7	(1)
BASF 93	5,000	9	15	26	149	22	14	33	3	44	5	35	13	34	–		–		–		21,770	13	4
BAYER USA 99	4,719	10	12	32	124	26	1	38	3	46	3	46	9	40	–		–		–		25,868	9	7
AMERICAN CYANAMID 101	4,592	11	10	35	306	9	11	35	7	26	7	30	15	30	6	18	19	17	16	16	35,501	8	4
FMC 136	3,287	12	5	42	129	25	(28)	42	4	38	5	38	–		(2)	31	25	7	(5)	36	24,342	10	(2)
QUANTUM CHEMICAL 139	3,235	13	22	16	383	6	52	17	12	12	13	11	–		16	6	27	4	50	4	11,034	21	1
HERCULES 154	2,802	14	4	43	120	28	(85)	44	4	35	4	45	6	43	1	30	16	25	(1)	34	22,718	12	(2)
ETHYL 158	2,718	15	58	5	231	13	19	30	8	18	4	40	20	17	14	9	28	3	19	13	10,400	22	4
ROHM & HAAS 168	2,535	16	15	27	230	14	18	32	9	16	10	14	19	18	17	5	25	8	12	19	12,444	19	4
GOODRICH (B.F.) 169	2,520	17	16	24	196	17	86	11	8	22	9	16	17	22	5	24	18	20	32	7	12,302	20	3
AIR PRODS. & CHEM. 176	2,432	18	14	30	214	15	37	21	9	17	7	27	17	24	11	13	16	24	4	28	13,300	18	10
ENGELHARD 180	2,351	19	(5)	47	64	39	(9)	39	3	45	5	39	8	41	–		–		(11)	38	8,300	25	24
MORTON THIOKOL 183	2,316	20	17	23	145	23	5	36	6	27	8	24	14	33	12	10	18	18	(5)	37	20,400	14	4
OLIN 185	2,308	21	20	18	98	35	26	26	4	37	5	34	14	31	6	23	16	23	26	9	16,400	16	16
VALHI 188	2,252	22	63	4	86	37	671	1	4	39	4	44	28	10	(10)	33	17	21	34	6	16,150	17	37
SHERWIN-WILLIAMS 209	1,950	23	(7)	48	101	33	5	37	5	30	8	22	17	23	38	1	29	2	7	26	16,607	15	4
FREEPORT-MCMORAN 211	1,945	24	28	9	310	8	25	27	16	7	8	20	28	9	25	2	20	10	23	11	6,474	29	1
HIMONT 230	1,711	25	47	7	373	7	6[illegible]	15	22	3	2[illegible]	6	27	11	–		–		18	14	3,600	39	29
CABOT 232	1,677	26	18	21	60	40	110	9	4	41	4	43	10	39	4	27	18	19	20	12	5,155	34	1
WITCO 242	1,586	27	11	33	92	36	45	19	6	29	8	21	16	27	8	17	20	11	9	23	7,601	26	(2)
DOW CORNING 252	1,477	28	13	31	151	21	11	34	10	15	10	15	19	20	–		–		–		7,300	27	4
INT'L MIN. & CHEM. 254	1,471	29	(10)	49	114	29	438	2	8	23	6	31	11	37	(2)	32	11	32	(17)	39	6,900	28	(43)
INSPIRATION RESOURCES 270	1,366	30	10	36	42	41	69	14	3	43	5	36	10	38	–		–		2	32	4,200	38	(16)
PENNWALT 291	1,226	31	2	44	179	20	241	4	15	8	19	7	79	3	12	11	19	14	139	1	5,000	35	(44)
LUBRIZOL 312	1,117	32	10	34	140	24	72	13	13	11	14	10	21	15	6	21	9	33	13	18	4,781	36	(1)
ARISTECH CHEMICAL 321	1,065	33	16	25	188	19	170	6	18	5	28	3	46	5	–		–		7	25	1,700	43	1
GEORGIA GULF 324	1,061	34	50	6	194	18	137	7	18	4	42	2	76	4	–		–		43	5	1,367	45	38
HANNA (M.A.) 330	1,019	35	122	1	83	38	129	8	8	20	9	19	18	21	6	22	3	34	52	3	9,360	23	8
NALCO CHEMICAL 335	994	36	18	20	106	31	32	24	11	13	13	12	22	12	11	15	15	27	10	21	5,381	32	6
GAF 342	961	37	15	28	100	34	(58)	43	10	14	7	28	16	26	12	12	27	6	4	29	4,638	37	0
CF INDUSTRIES 345	958	38	18	19	–		–		–		–		–		–		–		–		1,512	44	6
DEXTER 369	827	39	6	40	35	42	(17)	40	4	36	6	32	12	36	4	26	14	28	(2)	35	5,400	31	2
VISTA CHEMICAL 375	781	40	28	10	113	30	–		14	9	22	4	81	2	–		–		12	20	1,700	43	5
INSILCO 387	753	41	5	41	–		–		–		–		–		–		–		–		–		–
STERLING CHEMICALS 403	699	42	69	3	213	16	350	3	30	1	72	1	235	1	–		–		–		927	47	–
FULLER (H.B.) 408	685	43	15	29	21	46	(18)	41	3	42	5	37	12	35	11	14	21	9	(24)	40	5,200	33	13
GREAT LAKES CHEMICAL 435	616	44	23	14	103	32	86	12	17	6	16	8	21	14	20	3	19	16	9	22	2,900	40	13
SCHULMAN (A.) 449	598	45	29	8	28	44	40	20	5	32	11	13	19	19	19	4	34	1	16	15	1,200	46	8
BORDEN CHEMICALS 472	553	46	–		121	27	–		22	2	20	5	33	7	–		–		–		700	48	–
AVERY 479	532	47	(11)	50	(59)	48	–		(11)	48	(14)	48	(754)	45	–		–		–		2,760	41	4
BIG THREE INDUSTRIES 483	525	48	1	45	–		–		–		–		–		–		–		–		–		–
GROW GROUP 495	507	49	1	46	0	47	(97)	45	0	47	0	47	0	44	–		16	22	84	2	2,479	42	(29)
NCH 499	501	50	17	22	30	43	53	16	6	28	9	18	17	25	7	20	15	26	8	24	8,962	24	3
CHEMED 500	501	51	28	11	24	45	18	31	5	31	7	25	22	13	3	28	13	31	3	30	5,556	30	15
TOTAL	162,531				12,430																852,553		
MEDIAN	1,677		16		135		35		7		8		17		8		18		11		8,631		4

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																							
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
		$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	1978-88 annual growth rate %	Rank	1978-88 annual average %	Rank	1988 %	Rank	Number	Rank	% change from 1987
6	**COMPUTERS (INCLUDES OFFICE EQUIPMENT)** 26 COMPANIES																								
	IBM 4	59,681	1	10	19	5,806	1	10	12	10	7	8	10	15	13	6	8	10	9	10	6	387,112	1	(1)
	DIGITAL EQUIPMENT 30	11,475	2	22	11	1,306	2	15	11	11	4	13	4	17	11	19	4	14	8	(27)	21	121,500	2	10
	UNISYS 38	9,902	3	2	26	681	4	18	10	7	12	6	13	14	14	6	11	6	12	(14)	13	93,000	3	1
	HEWLETT-PACKARD 39	9,831	4	22	12	816	3	27	6	8	9	11	6	18	8	18	5	17	5	(8)	11	87,000	4	6
	NCR 72	5,990	5	6	25	439	5	5	14	7	10	9	8	20	5	6	10	16	6	(14)	14	60,000	5	(3)
	APPLE COMPUTER 114	4,071	6	53	5	400	6	84	2	10	6	19	1	40	1	–		–		(3)	9	10,800	13	40
	CONTROL DATA 125	3,628	7	8	23	2	22	(91)	20	0	22	0	22	0	22	(36)	15	2	14	(9)	12	33,500	7	(3)
	WANG LABORATORIES 145	3,068	8	8	22	93	12	–		3	17	3	18	6	18	12	7	9	10	(23)	19	31,516	8	4
	ZENITH ELECTRONICS 159	2,686	9	14	17	12	20	–		0	20	1	20	2	20	(10)	13	6	13	29	1	36,000	6	3
	PITNEY BOWES 162	2,665	10	18	14	243	8	22	8	9	8	5	16	19	7	14	6	26	3	14	3	29,316	10	(0)
	COMPAQ COMPUTER 202	2,066	11	69	2	255	7	87	1	12	3	16	2	31	2	–		–		8	7	6,500	22	63
	AMDAHL 226	1,802	12	20	13	223	9	53	5	12	2	12	5	22	4	4	12	7	11	15	2	8,300	17	11
	PRIME COMPUTER 241	1,595	13	66	4	19	18	(71)	18	1	19	1	19	4	19	6	9	15	7	13	5	12,386	12	40
	DATA GENERAL 272	1,365	14	7	24	(16)	24	–		(1)	24	(1)	24	(3)	23	–		(5)	15	(22)	18	15,420	11	(2)
	TANDEM COMPUTERS 278	1,315	15	27	9	94	11	(11)	15	7	11	7	11	11	17	28	2	23	4	(39)	23	8,624	15	23
	SEAGATE TECHNOLOGY 285	1,266	16	32	8	77	14	(45)	17	6	14	7	12	18	10	–		–		(42)	24	30,000	9	101
	SUN MICROSYSTEMS 327	1,052	17	96	1	66	15	83	3	6	13	9	9	18	9	–		–		(1)	8	7,100	20	69
	MEMOREX TELEX 358	890	18	8	21	(7)	23	(108)	21	(1)	23	0	23	–		–		–		–		6,186	23	(23)
	STORAGE TECHNOLOGY 362	874	19	17	16	44	16	70	4	5	15	5	15	16	12	(16)	14	(20)	16	(7)	10	8,498	16	(4)
	INTERGRAPH 372	800	20	25	10	88	13	26	7	11	5	[illegible]	7	13	15	–		–		(15)	16	7,300	19	16
	SCI SYSTEMS 374	774	21	40	7	19	19	19	9	2	18	4	17	13	16	28	3	29	2	13	4	8,970	14	35
	CRAY RESEARCH 385	756	22	10	20	157	10	6	13	21	1	16	3	23	3	42	1	29	1	(14)	15	5,237	24	22
	ATARI 400	705	23	43	6	(85)	26	(248)	22	(12)	25	(23)	26	(102)	25	–		–		(25)	20	1,780	26	(55)
	APOLLO COMPUTER 423	654	24	18	15	2	21	(90)	19	0	21	0	21	1	21	–		–		(30)	22	4,446	25	11
	XIDEX 427	637	25	11	18	(82)	25	–		(13)	26	(14)	25	(28)	24	–		–		–		7,425	18	5
	MINISCRIBE 444	603	26	66	3	26	17	(17)	16	4	16	5	14	20	6	–		–		(18)	17	6,648	21	34
	TOTAL	130,151				10,680																1,034,564		
	MEDIAN	1,480		19		83		13		6		6		15		6		12		(12)		9,885		8
7	**ELECTRONICS** 45 COMPANIES																								
	GENERAL ELECTRIC 5	49,414	1	26	11	3,386	1	16	22	7	12	3	33	18	14	11	16	19	9	5	21	298,000	1	(1)
	WESTINGHOUSE ELECTRIC 27	12,500	2	17	19	823	2	11	27	7	13	5	28	22	7	15	7	26	2	10	15	119,640	2	6
	MOTOROLA 52	8,250	3	23	13	445	6	44	8	5	19	7	19	13	27	10	17	14	20	(14)	37	102,000	3	4
	RAYTHEON 53	8,192	4	7	32	490	4	10	28	6	15	10	10	23	5	12	13	15	19	4	25	76,200	5	(0)
	HONEYWELL 60	7,148	5	7	31	(435)	44	(271)	37	(6)	44	(9)	43	(25)	42	–		9	30	15	11	78,383	4	(1)
	TRW 62	6,982	6	2	38	261	11	7	30	4	28	6	25	17	22	5	24	13	23	(9)	32	73,200	7	(6)
	EMERSON ELECTRIC 66	6,652	7	8	30	529	3	13	26	8	10	11	8	19	11	9	18	14	21	(9)	31	70,800	8	3
	TEXAS INSTRUMENTS 68	6,295	8	13	24	366	9	19	20	6	17	8	15	16	23	7	21	6	34	(25)	40	75,685	6	(3)
	NORTH AMERICAN PHILIPS 84	5,424	9	12	25	79	19	–		1	38	2	36	5	38	–		–		–		57,229	9	13
	WHIRLPOOL 104	4,421	10	6	35	94	17	(51)	35	2	35	3	34	7	33	0	30	15	17	6	18	29,110	13	(4)
	TELEDYNE 105	4,401	11	37	8	392	8	4	31	9	8	8	17	18	15	14	8	23	6	11	14	43,800	11	(1)
	COOPER INDUSTRIES 107	4,258	12	19	16	224	12	29	12	5	20	5	27	13	28	4	27	12	27	0	26	46,300	10	7
	WARNER COMM. 109	4,206	13	24	12	423	7	29	13	10	7	9	13	24	4	12	12	19	10	35	4	14,460	25	–
	INTEL 150	2,875	14	51	4	453	5	83	5	16	1	13	3	22	6	21	2	16	16	(10)	34	20,800	17	8
	AMP 161	2,670	15	15	21	319	10	28	14	12	2	13	2	21	8	13	10	18	13	(3)	27	24,100	14	10
	NAT'L SEMICONDUCTOR 173	2,470	16	32	9	63	24	–		3	31	4	30	6	35	2	28	8	32	(19)	38	37,700	12	29
	HARRIS 203	2,063	17	(1)	40	100	16	19	19	5	24	6	22	10	32	2	29	2	35	7	17	22,600	15	(7)
	MCDERMOTT 206	1,991	18	(3)	41	22	36	–		1	41	1	41	3	40	–		–		–		21,000	16	(5)
	MAYTAG 216	1,909	19	(0)	39	159	13	4	32	6	9	12	4	32	2	12	14	20	8	(9)	33	12,913	28	(1)
	GENERAL SIGNAL 227	1,760	20	10	29	25	33	(64)	36	1	39	2	37	5	37	(11)	34	10	29	5	20	19,[illegible]82	20	(0)
	SQUARE D 233	1,657	21	12	26	119	15	8	29	7	11	9	14	19	12	5	23	15	18	(5)	28	20,700	18	5
	RELIANCE ELECTRIC 246	1,552	22	10	27	24	34	500	1	2	37	2	39	18	16	–		–		–		11,339	21	3
	CHICAGO PACIFIC 250	1,500	23	6	34	–		–		–		–		–		–		–		162	1	–		–
	LORAL 256	1,441	24	109	1	74	21	29	11	5	22	5	26	17	20	16	5	18	12	4	23	13,700	26	65
	E-SYSTEMS 257	1,439	25	17	18	75	20	23	16	5	21	10	11	15	26	15	6	23	5	12	12	16,717	22	8
	NAT'L SERVICE IND. 260	1,414	26	7	33	86	18	14	25	6	14	10	9	15	24	12	15	25	3	5	22	20,400	19	5
	GENERAL INSTRUMENT 277	1,315	27	39	7	66	23	–		5	23	6	23	12	30	7	20	13	25	(13)	36	15,400	23	(6)
	VARIAN ASSOCIATES 305	1,171	28	19	14	28	31	30	10	2	32	3	32	6	36	5	25	17	14	16	9	11,800	30	(1)
	ADVANCED MICRO DEV. 311	1,126	29	13	23	19	38	–		2	36	2	38	3	41	(2)	31	14	22	(13)	35	14,817	24	(18)

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																						
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
										SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
		$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
	RAYCHEM 315	1,095	30	16	20	125	14	70	7	11	5	11	7	17	16	18	4	13	24	(21)	39	10,909	31	10
	ALLEGHENY INT'L 341	968	31	(30)	43	(25)	43	–		(3)	43	(3)	42	–		–		(17)	36	(41)	41	12,200	29	(5)
	MAGNETEK 352	910	32	49	5	20	37	301	2	2	34	3	31	60	1	–		–		–		13,250	27	6
	CHAMPION SPARK PLUG 374	785	33	(21)	42	24	35	24	15	3	29	4	29	7	34	(7)	33	9	31	18	7	8,300	33	(10)
	PITTWAY 377	771	34	19	15	37	28	15	23	5	25	6	20	11	31	6	22	16	15	30	5	7,800	34	(2)
	WESTERN DIGITAL 380	768	35	66	3	43	27	(10)	33	6	18	8	16	17	19	–		–		(9)	30	6,582	36	97
	AMETEK 402	701	36	13	22	31	29	(26)	34	4	27	7	18	17	21	4	26	18	11	4	24	5,200	38	(28)
	SSMC 414	668	37	–		(16)	42	–		(2)	42	–		–		–		–		16	10	24,100	14	–
	VALMONT INDUSTRIES 415	663	38	49	6	15	39	85	4	2	33	6	24	19	10	23	1	26	1	130	2	3,856	42	4
	LPL INVESTMENT GROUP 425	651	39	66	2	9	41	81	6	1	40	1	40	21	9	–		–		12	13	6,740	35	–
	HUBBELL 436	614	40	6	36	71	22	14	24	12	4	14	1	18	17	12	11	24	4	9	16	5,159	39	(1)
	FAIRCHILD INDUSTRIES 455	592	41	(34)	44	27	32	17	21	5	26	6	21	25	3	(4)	32	7	33	81	3	4,989	40	2
	SPRAGUE TECHNOLOGIES 487	517	42	10	28	13	40	267	3	3	30	3	35	4	39	–		–		26	6	8,500	32	2
	THOMAS & BETTS 489	515	43	18	17	58	26	21	17	11	6	12	5	19	13	8	19	12	26	(6)	29	4,700	41	12
	SCIENTIFIC-ATLANTA 492	509	44	3	37	30	30	22	[illegible]	6	16	9	12	13	29	14	9	10	28	18	8	3,445	43	3
	MOLEX 497	502	45	30	10	59	25	37	9	12	3	12	6	15	25	20	3	21	7	6	19	5,900	37	19
	TOTAL	167,722				9,232																1,505,505		
	MEDIAN	1,500		13		69		19		5		6		17		9		15		5		16,717		2
8	**FOOD** 48 COMPANIES																							
	OCCIDENTAL PETROLEUM 14	19,417	1	14	11	302	9	26	11	2	29	1	35	5	34	–		14	29	15	24	57,500	6	4
	RJR NABISCO 20	16,956	2	7	28	1,303	1	15	18	8	4	8	16	24	10	13	13	30	4	110	2	116,881	1	(3)
	SARA LEE 36	10,424	3	14	10	325	7	22	13	3	19	6	21	18	16	13	12	28	9	23	19	85,700	3	(7)
	CONAGRA 44	9,475	4	5	31	155	16	4	24	2	28	5	24	19	15	16	4	33	3	17	22	42,993	9	2
	BEATRICE 57	7,505	5	(16)	45	529	2	–		7	6	9	9	108	1	–		–		–		19,700	16	(68)
	BORDEN 59	7,244	6	11	16	312	8	17	17	4	15	7	18	17	17	11	16	27	10	23	18	46,300	8	18
	ARCHER DANIELS 65	6,798	7	18	5	353	6	33	7	5	12	8	15	13	26	16	5	20	22	4	31	9,006	25	(15)
	PILLSBURY 70	6,191	8	1	36	69	19	(62)	32	1	30	2	32	5	33	(2)	29	27	14	93	4	101,800	2	(3)
	RALSTON PURINA 71	6,176	9	5	32	388	4	(26)	29	6	7	10	8	36	4	15	8	26	16	31	13	56,734	5	(3)
	GENERAL MILLS 76	5,778	10	11	17	283	11	28	10	5	13	11	6	44	2	9	20	19	23	8	27	74,500	4	14
	QUAKER OATS 88	5,330	11	17	6	256	13	5	22	5	14	9	12	20	14	14	10	30	5	30	14	31,300	13	2
	HEINZ (H.J.) 89	5,244	12	13	12	386	5	14	19	7	5	11	5	24	8	15	6	26	15	19	21	38,000	11	(20)
	CAMPBELL SOUP 95	4,869	13	8	21	274	12	11	21	6	11	8	17	14	24	9	22	19	24	16	23	48,399	7	(2)
	CPC INTERNATIONAL 100	4,700	14	(4)	40	289	10	(19)	27	6	8	9	11	24	9	9	21	21	20	32	12	32,000	12	2
	KELLOGG 106	4,349	15	15	7	480	3	21	14	11	1	15	2	32	5	15	7	27	11	26	16	17,461	17	(2)
	WHITMAN 119	3,915	16	(15)	44	234	14	(7)	26	6	9	7	20	27	7	5	25	27	13	19	20	25,396	15	(24)
	AGWAY 124	3,644	17	12	14	–		–		–		–		–		–		–		–		16,851	18	(3)
	UNITED BRANDS 130	3,503	18	7	27	60	20	2	25	2	27	4	27	15	21	9	19	19	25	9	25	42,000	10	5
	SIPCO 141	3,225	19	(13)	43	11	32	–		0	36	3	30	–		–		–		–		5,403	32	(21)
	HERSHEY FOODS 167	2,561	20	5	33	214	15	44	4	8	3	12	4	21	13	17	3	27	12	9	26	12,100	22	(25)
	LAND O'LAKES 179	2,355	21	8	26	–		–		–		–		–		–		–		–		6,724	30	(5)
	HORMEL (GEO. A.) 186	2,293	22	(1)	37	60	21	31	9	3	21	9	14	14	25	12	15	26	17	5	30	7,984	26	(10)
	CENTRAL SOYA 193	2,189	23	44	1	11	31	31	8	1	33	2	34	6	31	–		–		–		3,360	38	5
	TYSON FOODS 212	1,936	24	8	22	81	18	20	15	4	16	9	10	24	11	20	1	38	1	34	10	26,000	14	3
	INT'L MULTIFOODS 231	1,698	25	11	18	33	26	(36)	30	2	24	4	28	9	27	2	27	15	28	8	28	9,048	24	5
	MID-AMERICA DAIRYMEN 235	1,655	26	10	19	–		–		–		–		–		–		–		–		4,000	37	5
	HOLLY FARMS 243	1,583	27	13	13	36	25	(49)	31	2	22	5	26	9	28	4	26	24	19	113	1	15,000	19	3
	DEAN FOODS 247	1,552	28	8	24	43	23	4	23	3	20	9	13	16	18	14	11	29	7	24	17	7,100	28	3
	WILSON FOODS 276	1,324	29	(2)	39	7	33	18	16	0	34	3	29	8	29	–		–		88	5	5,100	33	4
	MCCORMICK 300	1,184	30	10	20	43	24	40	6	4	18	6	22	15	23	9	18	18	27	57	7	7,626	27	2
	GERBER PRODUCTS 307	1,166	31	11	15	21	28	(26)	28	2	25	3	31	6	30	(2)	28	25	18	75	6	14,658	21	(8)
	AMSTAR 325	1,057	32	(24)	46	(6)	38	(124)	35	(1)	38	(1)	38	(9)	37	–		–		–		4,624	34	(12)
	GOLD KIST 328	1,044	33	(30)	47	–		–		–		–		–		–		–		–		9,100	23	(4)
	SAVANNAH FOODS & IND. 347	917	34	4	34	20	29	43	5	2	23	5	25	15	22	8	23	35	2	34	11	1,665	46	(11)
	SMITHFIELD FOODS 348	916	35	(12)	42	17	30	152	2	2	26	13	3	42	3	11	17	30	6	37	9	4,100	36	(13)
	AG PROCESSING 351	910	36	35	2	–		–		–		–		–		–		–		–		587	47	(0)
	WRIGLEY (WM. JR.) 357	891	37	14	8	87	17	24	12	10	2	20	1	28	6	12	14	18	26	8	29	5,500	31	–
	IBC HOLDINGS 365	855	38	14	9	(27)	39	(296)	36	(3)	39	(4)	39	(246)	38	–		–		–		14,700	20	30
	OCEAN SPRAY 382	767	39	6	29	–		–		–		–		–		–		–		–		1,940	44	3
	FLOWERS INDUSTRIES 392	738	40	(7)	41	43	22	56	3	6	10	10	7	22	12	15	9	28	8	1	32	9,100	23	(3)
	UNIVERSAL FOODS 396	720	41	1	35	28	27	11	20	4	17	7	19	18	20	6	24	20	21	106	3	4,433	35	15

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																						
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
										SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
		$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
	FINEVEST FOODS 429	835	42	—		3	35	—		1	32	2	33	6	32	—		—		—		3,050	40	—
	RICELAND FOODS 430	633	43	21	3	—		—		—		—		—		—		—		—		1,792	45	(0)
	THORN APPLE VALLEY 452	593	44	(1)	38	5	34	415	1	1	31	5	23	16	19	19	2	—		—		2,630	41	8
	SUN-DIAMOND GROWERS 471	554	45	6	30	—		—		—		—		—		—		—		—		2,500	42	2
	AMER. MAIZE-PROD. 474	548	46	8	25	1	37	(89)	34	0	37	0	37	1	36	(16)	30	13	30	29	15	3,107	39	(7)
	PRAIRIE FARMS DAIRY 490	512	47	8	23	—		—		—		—		—		—		—		—		2,000	43	—
	PILGRIM'S PRIDE 496	506	48	20	4	2	36	(84)	33	0	35	1	36	2	35	—		—		52	8	6,800	29	26
	TOTAL	169,033				6,822																1,060,252		
	MEDIAN	1,817		8		60		15		3		7		16		11		26		25		9,048		(1)
9	**FOREST PRODUCTS** 33 COMPANIES																							
	WEYERHAEUSER 37	10,004	1	43	1	564	2	26	21	6	26	4	32	14	29	3	24	9	25	2	24	46,976	2	18
	INTERNATIONAL PAPER 42	9,5[illegible]	2	23	4	754	1	85	6	8	18	8	19	16	24	10	15	15	19	13	14	55,500	1	22
	GEORGIA-PACIFIC 43	9,509	3	11	20	467	3	2	30	5	29	7	27	18	21	5	21	8	26	10	17	44,000	3	5
	KIMBERLY-CLARK 85	5,394	4	10	21	379	6	16	25	7	22	9	15	20	15	11	13	25	5	20	9	38,328	5	3
	CHAMPION INTERNATIONAL 91	5,129	5	11	19	456	4	19	24	9	16	7	25	14	30	4	22	8	27	(4)	29	30,400	6	(1)
	JAMES RIVER 92	5,098	6	14	16	209	13	23	23	4	31	4	31	10	32	16	5	22	9	23	8	39,000	4	11
	SCOTT PAPER 98	4,726	7	15	13	401	5	71	7	8	17	8	22	21	14	16	8	24	6	14	12	27,000	7	6
	MEAD 103	4,464	8	6	26	353	7	62	10	8	19	10	11	23	8	8	19	18	13	17	10	21,000	8	2
	BOISE CASCADE 112	4,095	9	7	25	289	12	58	11	7	21	8	17	17	22	8	18	15	21	4	22	19,835	10	(2)
	STONE CONTAINER 122	3,742	10	16	9	342	8	112	4	9	15	14	6	32	2	—		35	1	32	3	20,700	9	10
	GREAT NORTH. NEKOOSA 127	3,588	11	39	2	342	9	70	9	10	11	9	14	22	10	16	6	19	11	(15)	31	13,600	11	20
	UNION CAMP 163	2,661	12	15	11	295	11	42	16	11	9	10	13	19	18	10	17	13	22	(2)	27	18,508	12	6
	WESTVACO 197	2,134	13	12	18	200	14	37	18	9	13	8	18	15	27	10	14	19	12	8	19	14,750	14	1
	TEMPLE-INLAND 200	2,099	14	31	3	199	15	41	17	9	12	6	28	18	20	—		—		0	25	11,000	18	(5)
	LOUISIANA-PACIFIC 217	1,903	15	(1)	31	300	10	140	1	16	2	17	3	26	5	3	25	11	24	12	16	13,000	15	[illegible]
	FORT HOWARD 219	1,858	16	6	27	—		—		—		—		—		—		—		—		—		—
	WILLAMETTE INDUSTRIES 229	1,716	17	20	8	161	17	33	19	9	14	11	8	22	11	12	12	15	20	4	21	9,325	19	8
	SONOCO PRODUCTS 240	1,600	18	22	5	96	23	57	13	6	25	10	12	21	12	16	7	31	2	65	1	14,859	13	5
	AVERY INTERNATIONAL 244	1,582	19	8	24	78	26	124	2	5	28	7	24	15	26	14	9	23	8	9	18	11,500	17	(4)
	BOWATER 262	1,410	20	15	14	164	16	103	5	12	7	9	16	20	16	—		—		(5)	30	5,000	24	—
	ESSELTE BUSINESS SYS. 267	1,401	21	13	17	59	27	3	29	4	30	5	29	13	31	—		—		(4)	28	12,976	16	(1)
	JEFFERSON SMURFIT 288	1,255	22	14	15	144	19	57	12	12	8	18	2	46	1	—		—		14	11	7,600	21	(3)
	FEDERAL PAPER BOARD 313	1,117	23	9	23	143	20	118	3	13	6	11	9	22	9	—		17	15	5	20	5,300	23	(9)
	POTLATCH 317	1,084	24	9	22	112	21	28	20	10	10	8	20	16	25	7	20	12	23	13	13	7,240	22	2
	BEMIS 319	1,069	25	15	12	40	30	24	22	4	32	7	26	17	23	12	11	30	3	24	7	7,855	20	3
	CONSOLIDATED PAPERS 355	897	26	21	6	150	18	56	14	17	1	16	4	21	13	13	10	23	7	26	5	4,454	26	2
	DENNISON MFG. 394	722	27	2	30	37	31	8	28	5	27	7	23	15	28	4	23	15	18	(0)	26	7,600	21	3
	CHESAPEAKE 399	711	28	5	28	52	28	71	8	7	20	8	21	18	19	19	2	17	14	24	6	4,215	27	8
	GAYLORD CONTAINER 412	671	29	—		42	29	—		6	23	5	30	29	3	—		—		—		3,900	28	—
	LONGVIEW FIBRE 421	657	30	15	[illegible]	96	22	48	15	15	4	15	5	27	4	17	4	17	16	56	2	3,450	29	3
	GLATFELTER (P.H.) 461	569	31	—		82	25	—		14	5	12	7	24	6	18	3	30	4	27	4	3,439	30	—
	TAMBRANDS 465	563	32	5	29	85	24	11	27	15	3	18	1	24	7	10	16	21	10	13	15	4,700	25	—
	POPE & TALBOT 488	515	33	21	7	32	32	14	26	6	24	10	10	20	17	19	1	16	17	3	23	3,128	31	18
	TOTAL	93,478				7,124																536,136		
	MEDIAN	1,716		14		163		45		9		8		20		11		17		12		12,976		3
10	**FURNITURE** 8 COMPANIES																							
	INTERCO 133	3,341	1	28	1	145	2	47	1	4	7	7	6	12	7	2	7	(C)	8	(66)	8	54,000	1	15
	MASCO 175	2,439	2	21	4	288	1	32	5	12	1	10	4	19	2	14	3	20	5	19	3	27,000	2	—
	LEGGETT & PLATT 371	810	3	25	2	38	4	1	7	5	6	8	5	15	5	12	4	21	4	11	4	10,600	3	8
	MOHASCO 373	791	4	(2)	8	(18)	8	(242)	8	(2)	8	—		—		—		23	3	97	2	—		—
	MILLER (HERMAN) 398	714	5	24	3	45	3	34	4	6	3	10	3	18	3	26	1	27	2	5	5	5,074	7	2
	OHIO MATTRESS 417	662	6	11	6	33	7	42	3	5	5	6	7	13	6	20	2	36	1	107	1	5,555	5	0
	HON INDUSTRIES 459	575	7	4	7	35	6	43	2	6	4	13	1	24	1	10	6	14	7	(5)	6	5,423	6	(12)
	KIMBALL INTERNATIONAL 481	530	8	11	5	36	5	19	6	7	2	11	2	16	4	10	5	18	6	(11)	7	8,270	4	11
	TOTAL	9,861				602																115,922		
	MEDIAN	752		16		37		33		6		10		16		12		21		8		8,270		5
11	**INDUSTRIAL AND FARM EQUIPMENT** 33 COMPANIES																							
	TENNECO 24	15,707	1	4	31	822	1	—		5	9	5	23	25	1	2	15	13	13	31	11	94,000	1	(10)

INDUSTRY TABLE NUMBER / COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES: SALES				PROFITS				PROFITS AS % OF: SALES		ASSETS		EQUITY		EARNINGS PER SHARE 1978-88 annual growth rate		TOTAL RETURN TO INVESTORS 1978-88 annual average		1988		EMPLOYEES		
	$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
CATERPILLAR 35	10,435	2	28	7	616	2	76	4	6	6	6	8	15	11	(1)	20	4	24	4	26	60,558	2	11
DEERE 87	5,365	3	30	4	315	3	–		6	7	6	12	13	16	0	18	7	20	40	5	38,268	3	1
DRESSER INDUSTRIES 118	3,942	4	26	8	157	5	221	2	4	21	5	16	10	24	(1)	21	8	18	14	18	30,700	5	(0)
CUMMINS ENGINE 135	3,310	5	20	14	(63)	32	(557)	26	(2)	32	(3)	32	(9)	31	–		11	15	42	4	26,100	7	7
INGERSOLL-RAND 146	3,021	6	14	22	162	4	37	8	5	8	7	7	12	19	1	16	11	14	(1)	28	30,284	6	2
BAKER HUGHES 184	2,316	7	20	12	103	8	–		4	14	5	21	11	23	(5)	23	2	28	6	24	21,492	9	1
BLACK & DECKER 187	2,281	8	18	15	97	9	75	5	4	18	5	19	13	14	0	17	7	22	25	14	20,800	10	6
PARKER HANNIFIN 189	2,252	9	20	13	107	7	25	14	5	12	6	10	13	17	5	10	14	12	(21)	33	33,300	4	21
DOVER 208	1,954	10	23	10	146	6	31	11	7	2	11	2	20	6	13	6	21	5	(6)	30	20,412	11	16
TRINOVA 214	1,919	11	14	23	88	11	17	16	5	13	6	9	13	15	3	13	18	8	(12)	32	23,251	8	12
TIMKEN 245	1,554	12	26	9	66	13	539	1	4	19	4	25	7	27	(5)	24	8	19	20	17	18,050	12	8
CRANE 255	1,452	13	13	25	62	14	5	18	4	17	9	3	23	4	10	8	17	9	36	7	10,892	17	(3)
AM INTERNATIONAL 280	1,297	14	12	26	(20)	31	(263)	24	(2)	31	(3)	31	(12)	32	–		(13)	29	5	25	7,539	25	(37)
CLARK EQUIPMENT 283	1,278	15	22	11	46	16	–		4	23	5	22	11	22	(8)	25	2	27	27	13	9,043	20	8
YORK HOLDINGS 290	1,235	16	28	6	(73)	33	(363)	25	(6)	33	(7)	33	–		–		–		121	1	9,877	18	10
FIGGIE INTERNATIONAL 295	1,200	17	17	16	62	15	25	13	5	10	6	11	17	9	15	5	27	3	23	15	17,400	13	6
HARNISCHFEGER IND. 298	1,167	18	13	24	14	27	(37)	23	1	28	1	28	3	28	(13)	26	2	26	(10)	31	11,600	16	2
TECUMSEH PRODUCTS 316	1,094	19	15	21	70	12	(2)	20	6	4	8	5	11	21	3	11	15	11	14	19	12,196	15	10
FUQUA INDUSTRIES 336	993	20	29	5	93	10	47	6	9	1	8	4	23	2	23	1	34	2	6	23	15,000	14	36
BRIGGS & STRATTON 350	914	21	16	19	30	22	14	17	3	24	6	14	10	25	(2)	22	7	21	12	20	9,827	19	14
INTERLAKE 356	892	22	8	28	40	20	(27)	21	4	15	6	13	15	12	16	4	23	4	3	27	7,799	24	(0)
CINCINNATI MILACRON 364	858	23	4	32	37	21	–		4	16	5	20	16	10	0	19	10	16	9	22	8,371	23	(10)
PENTAIR 370	823	24	4	30	40	19	82	3	5	11	5	18	14	13	6	9	21	6	70	3	8,700	21	40
PHILIPS INDUSTRIES 405	693	25	17	18	43	18	31	10	6	5	12	1	20	5	18	3	38	1	10	21	8,546	22	5
IMO INDUSTRIES 407	687	26	87	1	28	23	41	7	4	20	4	26	10	26	–		–		34	9	7,500	26	–
COLEMAN 419	658	27	10	27	24	24	28	12	4	22	6	15	12	20	3	12	15	10	31	10	6,000	29	3
NACCO INDUSTRIES 434	616	28	34	3	45	17	32	9	7	3	5	17	18	7	18	2	19	7	35	8	6,530	28	119
TORO 438	609	29	17	17	20	25	18	15	3	25	7	6	23	3	3	14	6	23	30	12	3,105	33	12
ALLIED PRODUCTS 458	578	30	16	20	5	29	–		1	29	1	29	3	29	11	7	9	17	21	16	5,300	32	2
JEPSON 467	560	31	6	29	13	28	(30)	22	2	27	4	24	17	8	–		–		76	2	5,475	30	(5)
J.P. INDUSTRIES 475	547	32	42	2	15	26	0	19	3	26	3	27	12	18	–		–		(3)	29	6,976	27	20
CAMERON IRON WORKS 498	502	33	3	33	(5)	30	–		(1)	30	(1)	30	(2)	30	–		3	25	37	6	5,362	31	17
TOTAL	72,730				3,205																600,253		
MEDIAN	1,200		17		45		25		4		5		13		3		11		20		10,892		6

12 JEWELRY, SILVERWARE 1 COMPANY

COMPANY 500 RANK	SALES $ Mil.	Rank	% change from 1987	Rank	PROFITS $ Mil.	Rank	% change from 1987	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	EPS 1978-88 %	Rank	1978-88 %	Rank	1988 %	Rank	EMPLOYEES Number	Rank	% change from 1987
JOSTENS 450	596	1	(7)	1	89	1	99	1	15	1	22	1	51	1	19	1	21	1	7	1	7,000	1	(12)

13 LEATHER N.A.

14 METAL PRODUCTS 17 COMPANIES

COMPANY 500 RANK	SALES $ Mil.	Rank	% change from 1987	Rank	PROFITS $ Mil.	Rank	% change from 1987	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	EPS 1978-88 %	Rank	1978-88 %	Rank	1988 %	Rank	EMPLOYEES Number	Rank	% change from 1987
TRIANGLE INDUSTRIES 111	4,104	1	(5)	15	(54)	16	(204)	14	(1)	14	(1)	15	(19)	14	–		–		–		23,000	4	(4)
GILLETTE 128	3,581	2	13	7	269	1	17	9	7	3	9	4	–		12	5	24	3	25	6	29,600	2	(2)
COMBUSTION ENGINEERING 131	3,484	3	6	12	(245)	17	(533)	15	(7)	17	(10)	17	(41)	16	–		10	11	(4)	13	28,832	3	5
EMHART 155	2,763	4	13	8	127	3	19	8	5	9	5	11	13	8	4	9	17	9	13	8	32,991	1	9
ILLINOIS TOOL WORKS 213	1,930	5	14	5	140	2	32	4	7	4	10	2	19	4	14	3	22	4	7	9	14,200	6	4
STANLEY WORKS 215	1,909	6	8	10	103	5	19	7	5	6	7	7	15	6	7	8	18	6	14	7	18,988	5	(1)
CROWN CORK & SEAL 221	1,834	7	7	11	93	6	6	10	5	7	9	5	14	7	9	6	17	10	32	4	12,567	7	2
HARSCO 282	1,279	8	9	9	31	10	(51)	12	2	10	3	12	7	11	(3)	12	17	8	5	11	11,600	8	5
BALL 318	1,073	9	2	14	51	9	(24)	11	5	8	6	10	12	10	8	7	22	5	(19)	15	7,100	12	3
TYLER 334	996	10	(9)	17	21	11	75	2	2	12	6	8	41	1	0	10	10	13	52	3	5,800	13	(23)
NEWELL 338	988	11	37	3	61	8	65	3	6	5	7	6	15	5	13	1	36	1	106	1	11,000	9	(8)
HILLENBRAND IND. 359	884	12	22	4	70	7	21	6	8	2	9	3	20	3	16	2	27	2	25	5	8,000	10	13
SNAP-ON TOOLS 366	855	13	13	6	113	4	28	5	13	1	17	1	22	2	13	4	18	7	3	12	7,114	11	2
LONE STAR TECH. 406	688	14	67	1	(25)	14	–		(4)	15	(1)	13	(8)	12	–		–		(10)	14	2,902	16	(10)
BUTLER MANUFACTURING 426	646	15	5	13	15	12	312	1	2	11	6	9	12	9	(2)	11	6	14	5	10	3,733	15	0
BANNER INDUSTRIES 473	548	16	48	2	(7)	13	(169)	13	(1)	13	(1)	14	(8)	13	–		10	12	69	2	8,000	10	–
ROBERTSON (H.H.) 494	508	17	(9)	16	(28)	15	–	16	(6)	16	(10)	16	(36)	15	–		(0)	15	(42)	16	5,193	14	(4)
TOTAL	28,068				735																230,620		
MEDIAN	1,073		9		51		18		5		6		13		9		17		10		11,300		1

THE FORTUNE

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																						
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
										SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
		$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
15	**METALS** 25 COMPANIES																							
	ALUMINUM CO. OF AMER. 40	9,795	1	26	7	861	1	330	4	9	8	8	13	19	11	8	11	13	8	23	8	59,000	1	7
	LTV 56	7,526	2	(1)	24	(3,154)	25	(727)	20	(42)	25	(51)	25	–		–		(9)	19	(10)	19	43,700	2	(9)
	REYNOLDS METALS 80	5,567	3	30	6	482	3	120	9	9	9	10	8	24	6	11	7	18	5	15	12	29,700	4	9
	BETHLEHEM STEEL 82	5,489	4	19	10	403	5	131	8	7	10	9	11	23	8	0	12	5	15	39	5	32,900	3	(4)
	INLAND STEEL IND. 116	4,068	5	18	11	262	6	81	13	6	12	9	12	17	14	(1)	13	5	14	40	3	20,639	5	(0)
	AMAX 117	3,944	6	15	14	741	2	–	1	19	2	18	2	43	3	12	6	(2)	17	14	14	20,000	6	1
	ARMCO 140	3,227	7	10	17	145	9	24	17	5	16	5	17	16	15	(10)	17	(4)	18	(11)	20	19,500	7	(5)
	NATIONAL STEEL 165	2,599	8	8	22	88	13	85	12	3	19	5	18	13	18	–		–		–		11,219	11	(10)
	PHELPS DODGE 182	2,320	9	44	3	420	4	104	11	18	3	15	4	25	5	27	2	12	10	15	13	10,752	12	24
	ASARCO 207	1,988	10	47	2	207	8	(26)	19	10	4	9	10	16	16	11	8	9	13	(1)	17	8,500	14	12
	TYCO LABORATORIES 239	1,602	11	44	4	66	15	148	6	4	18	7	14	23	7	15	5	37	1	58	2	12,000	10	13
	PENN CENTRAL 248	1,547	12	9	19	103	12	186	5	7	11	4	19	6	23	–		19	3	16	10	16,900	8	8
	WEIRTON STEEL 268	1,384	13	4	23	75	14	(7)	18	5	15	10	7	26	4	–		–		–		8,000	15	(1)
	CYCLOPS INDUSTRIES 289	1,251	14	14	15	29	19	–		2	21	6	16	83	1	–		–		(7)	18	7,239	16	32
	ALLEGHENY LUDLUM 294	1,208	15	39	5	109	11	135	7	9	7	15	3	48	2	–		–		39	4	5,600	20	4
	WHEELING-PITTSBURGH 314	1,103	16	10	18	259	7	–		23	1	20	1	–		28	1	(1)	16	30	7	6,234	17	(4)
	NUCOR 333	1,061	17	25	8	109	10	117	10	10	5	12	5	21	9	15	4	22	2	22	9	5,100	21	11
	AMSTED INDUSTRIES 343	960	18	17	12	11	23	–		1	24	2	23	6	22	–		–		–		8,700	13	5
	WORTHINGTON IND. 354	904	19	10	16	56	17	33	15	6	13	11	6	20	10	15	3	18	4	38	6	6,100	19	5
	HANDY & HARMAN 418	658	20	8	20	10	24	27	16	1	23	2	21	8	19	(3)	14	12	11	14	15	6,154	18	(1)
	TEXAS INDUSTRIES 428	635	21	8	21	13	22	942	2	2	22	2	22	7	21	(4)	16	12	9	16	11	3,200	25	(5)
	MAGMA COPPER 439	607	22	50	1	56	16	–		9	6	6	15	14	17	–		–		–		4,170	22	(7)
	LUKENS 442	605	23	20	9	33	18	54	14	6	14	9	9	18	12	9	10	14	7	(14)	21	3,838	24	8
	CARPENTER TECHNOLOGY 469	556	24	16	13	24	20	442	3	4	17	4	20	8	20	(4)	15	11	12	12	16	3,891	23	3
	MAXXAM 485	519	25	–		17	21	–		3	20	0	24	17	13	10	9	17	6	205	1	12,700	9	–
	TOTAL	61,124				1,429																365,736		
	MEDIAN	1,384		16		88		110		6		8		18		10		12		16		8,700		3
16	**MINING, CRUDE-OIL PRODUCTION** 9 COMPANIES																							
	BURLINGTON RESOURCES 194	2,167	1	–		72	4	–		3	5	1	5	2	5	–		–		–		7,185	2	–
	CYPRUS MINERALS 275	1,327	2	67	1	170	1	550	1	13	2	10	2	14	4	–		–		35	1	7,399	1	40
	UNION TEXAS 310	1,137	3	(10)	6	109	3	95	2	10	4	6	3	40	1	–		–		32	2	1,855	7	6
	VULCAN MATERIALS 326	1,053	4	(1)	3	136	2	17	3	13	1	14	1	21	2	12	1	24	1	30	3	6,331	3	6
	LOUISIANA LAND & EXP. 395	721	5	(12)	7	(33)	8	(234)	6	(5)	8	(2)	8	(7)	8	–		10	3	(4)	7	620	9	(26)
	NERCO 416	662	6	5	2	67	5	11	4	10	3	6	4	17	3	–		–		5	5	2,370	4	6
	WESTMORELAND COAL 451	593	7	(4)	4	2	7	–		0	7	0	7	1	7	(1)	2	(4)	5	(18)	8	1,585	8	(17)
	MAXUS ENERGY 460	575	8	(53)	8	(132)	9	–		(23)	9	[illegible]	[illegible]	(633)	9	–		(1)	4	(1)	6	1,981	6	(8)
	MITCHELL ENERGY 466	562	9	(4)	5	9	6	4	5	2	6	0	6	2	6	(12)	3	11	2	13	4	2,250	5	(2)
	TOTAL	8,797				399																31,576		
	MEDIAN	721		(4)		67		14		3		1		2		(1)		10		9		2,250		2
17	**MOTOR VEHICLES AND PARTS** 24 COMPANIES																							
	GENERAL MOTORS 1	121,085	1	19	7	4,856	2	37	8	4	11	3	15	14	15	2	9	12	10	45	5	765,700	1	(6)
	FORD MOTOR 2	92,446	2	29	3	5,300	1	15	10	6	5	4	13	25	4	14	2	24	2	40	6	358,939	2	2
	CHRYSLER 7	35,473	3	35	2	1,050	3	(19)	17	3	15	2	18	14	14	–		23	3	21	11	145,507	3	19
	DANA 90	5,172	4	25	5	162	8	12	12	3	14	3	14	17	10	4	7	12	9	19	12	39,500	6	5
	EATON 108	4,237	5	5	18	212	6	6	13	5	8	7	5	18	8	5	6	18	7	9	13	44,500	5	24
	NAVISTAR INT'L 113	4,080	6	16	9	244	5	631	2	6	3	10	3	28	3	(18)	11	(16)	14	28	8	15,719	8	5
	BORG-WARNER 142	3,218	7	(9)	22	419	4	–		13	1	16	1	77	1	–		–		–		70,200	4	(4)
	PACCAR 143	3,112	8	28	4	176	7	56	7	6	6	6	7	19	7	7	4	27	1	51	3	13,709	12	29
	FRUEHAUF 196	2,143	9	(23)	23	(56)	22	–		(3)	22	(4)	22	–		–		–		(17)	17	15,300	9	(4)
	MACK TRUCKS 199	2,102	10	13	12	32	15	677	1	2	19	2	19	6	19	–		–		4	15	9,348	15	(1)
	MASCO INDUSTRIES 236	1,651	11	12	13	82	9	85	4	5	9	4	12	22	5	–		–		9	14	14,850	10	(1)
	ARVIN INDUSTRIES 271	1,365	12	(1)	19	4	20	(93)	19	0	20	0	20	1	20	(40)	12	17	8	4	16	16,866	7	2
	ECHLIN 281	1,294	13	18	8	62	10	36	9	5	10	6	9	10	17	6	5	11	11	22	10	14,700	11	9
	FEDERAL-MOGUL 302	1,177	14	9	15	42	13	1	15	4	12	5	10	12	16	2	8	19	5	48	4	13,500	13	(6)
	SMITH (A.O.) 322	1,063	15	6	17	19	17	3	14	2	18	2	17	6	18	(7)	10	6	12	25	9	11,500	14	4
	SPX 360	878	16	13	11	45	11	72	5	5	7	6	6	14	13	8	3	18	6	34	7	9,000	16	19

RANKED WITHIN INDUSTRY BY 11 MEASURES

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	SALES $ Mil.	SALES Rank	SALES % change from 1987	SALES Rank	PROFITS $ Mil.	PROFITS Rank	PROFITS % change from 1987	PROFITS Rank	PROFITS AS % OF SALES %	SALES Rank	ASSETS %	ASSETS Rank	EQUITY %	EQUITY Rank	EARNINGS PER SHARE 1978-88 annual growth rate %	EARNINGS PER SHARE Rank	TOTAL RETURN TO INVESTORS 1978-88 annual average %	Rank	1988 %	Rank	EMPLOYEES Number	EMPLOYEES Rank	% change from 1987
	SHELLER-GLOBE 368	835	17	–		–		–		–		–		–		–		–		–		–		–
	EAGLE-PICHER IND. 379	770	18	14	10	(466)	23	–	20	(60)	23	(80)	23	–		–		1	13	(34)	19	9,000	16	8
	HARLEY-DAVIDSON 384	757	19	11	14	24	16	13	11	3	13	6	8	20	6	–		–		95	1	4,900	21	14
	DANAHER 388	752	20	(6)	20	44	12	132	3	6	4	8	4	28	2	36	1	23	4	66	2	6,500	18	(18)
	INT'L CONTROLS 401	704	21	(7)	21	(11)	21	–		(2)	21	(2)	21	(83)	21	–		–		–		3,250	22	–
	HARVARD INDUSTRIES 410	680	22	22	6	14	18	(25)	18	2	17	4	11	17	9	–		–		–		8,200	17	1
	UIS 468	560	23	8	16	36	14	64	6	6	2	11	2	14	11	–		–		–		6,100	19	–
	SUDBURY 478	532	24	55	1	11	19	0	16	2	16	3	16	14	12	–		–		(29)	18	5,800	20	–
	TOTAL	286,087				12,301																1,602,588		
	MEDIAN	1,330		13		44		14		4		4		14		5		18		22		14,205		3
18	**PETROLEUM REFINING** 29 COMPANIES																							
	EXXON 3	79,557	1	4	18	5,260	1	9	18	7	7	7	8	17	10	10	5	22	1	21	16	101,000	1	1
	MOBIL 6	48,198	2	(6)	26	2,087	2	66	11	4	15	5	13	13	[illegible]	7	8	17	4	23	14	69,600	2	(42)
	TEXACO 8	33,544	3	(2)	23	1,304	7	–		4	18	5	17	16	11	5	12	16	7	44	6	40,000	6	(20)
	CHEVRON 11	25,196	4	(3)	24	1,768	4	76	7	7	6	5	15	12	18	5	13	13	11	22	15	53,675	4	4
	AMOCO 12	21,150	5	5	16	2,063	3	52	13	10	3	7	9	15	13	8	6	16	6	14	20	53,423	5	14
	SHELL OIL 13	21,070	6	1	20	1,239	8	1	20	6	9	5	18	8	20	–		–		–		32,432	8	(2)
	ATLANTIC RICHFIELD 17	17,626	7	8	10	1,583	5	29	16	9	4	7	7	25	5	10	4	17	5	23	13	27,200	9	5
	USX 23	15,792	8	14	5	756	9	245	4	5	13	4	19	13	16	(1)	18	9	20	2	23	58,778	3	10
	PHILLIPS PETROLEUM 31	11,304	9	5	14	650	10	–	2	6	10	5	12	30	4	6	11	13	12	45	5	21,000	11	(7)
	UNOCAL 47	8,853	10	5	17	480	11	165	5	5	11	5	16	22	6	7	9	14	10	38	7	18,235	13	1
	SUN 48	8,612	11	(1)	22	7	26	(98)	22	0	26	0	26	0	26	(33)	22	14	9	(3)	24	21,300	10	(6)
	COASTAL 54	8,187	12	10	8	157	13	39	14	2	24	2	24	12	19	8	7	21	3	34	9	19,000	12	7
	ASHLAND OIL 55	7,753	13	13	6	224	12	68	9	3	22	5	14	20	7	4	15	13	13	19	17	37,600	7	(10)
	AMERADA HESS 110	4,206	14	(12)	28	124	16	(46)	21	3	21	2	22	6	22	(1)	20	12	14	29	11	8,151	15	3
	FARMLAND INDUSTRIES 153	2,805	15	9	9	–		–		–		–		–		–		–		–		5,800	17	4
	KERR-MCGEE 157	2,743	16	5	15	110	18	36	15	4	16	4	20	8	21	0	17	8	21	8	21	7,771	16	1
	AMERICAN PETROFINA 164	2,635	17	6	12	133	14	60	12	5	12	6	11	16	12	13	2	16	8	23	12	3,595	23	7
	PENNZOIL 201	2,088	18	17	3	1,475	6	–	1	71	1	33	1	114	1	31	1	21	2	5	22	10,000	14	61
	DIAMOND SHAMROCK R&M 224	1,804	19	–		54	20	–		3	20	6	10	15	14	–		–		80	1	4,000	22	–
	MAPCO 225	1,802	20	14	4	117	17	8	19	6	8	9	5	19	8	6	10	11	16	15	18	5,032	20	3
	MURPHY OIL 253	1,474	21	0	21	39	22	–		3	23	2	25	5	23	(1)	19	11	17	33	10	4,321	21	(7)
	FARMERS UNION 287	1,259	22	11	7	–		–		–		–		–		–		–		–		2,791	24	(3)
	CROWN CENTRAL 308	1,149	23	6	13	38	23	21	17	3	19	9	4	13	17	3	16	9	19	49	4	5,495	18	4
	TOSCO 309	1,142	24	(4)	25	90	19	71	8	8	5	16	3	34	3	5	14	(5)	22	79	2	850	28	(1)
	PACIFIC RESOURCES 361	877	25	(8)	27	40	21	552	3	5	14	8	6	17	9	12	3	11	15	37	8	953	27	6
	QUAKER STATE 363	869	26	2	19	15	25	–		2	25	2	23	5	24	(7)	21	10	18	15	19	5,371	19	(15)
	VALERO ENERGY 378	771	27	23	2	31	24	137	6	4	17	3	21	3	25	–		–		78	3	1,960	25	(1)
	REXENE 397	[illegible]	28	39	1	130	15	66	10	18	2	25	2	59	2	–		–		–		1,293	26	(1)
	NAT'L COOP. REFINERY 448	600	29	7	11	–		–		–		–		–		–		–		–		568	29	1
	TOTAL	333,786				19,974																621,194		
	MEDIAN	2,805		5		145		63		5		5		15		6		13		23		8,151		1
19	**PHARMACEUTICALS** 16 COMPANIES																							
	JOHNSON & JOHNSON 45	9,000	1	12	5	974	2	17	7	11	11	14	8	28	7	13	5	16	14	16	8	81,300	1	4
	BRISTOL-MYERS 73	5,973	2	11	8	829	4	17	8	14	8	16	4	23	9	14	4	22	3	13	9	35,200	6	3
	MERCK 74	5,940	3	17	3	1,207	1	33	2	20	1	20	3	42	1	16	3	21	4	12	11	32,000	8	3
	AMERICAN HOME PRODUCTS 81	5,501	4	9	13	932	3	10	14	17	4	20	2	31	4	11	8	17	11	20	6	44,964	2	2
	PFIZER 86	5,385	5	9	12	791	5	15	12	15	7	10	12	18	12	12	7	17	12	29	3	40,900	4	0
	ABBOTT LABORATORIES 94	4,937	6	13	4	752	7	19	4	15	6	16	5	31	5	18	2	22	2	2	14	38,751	5	2
	SMITHKLINE BECKMAN 97	4,749	7	10	11	229	12	(60)	15	5	15	5	15	15	13	3	15	12	16	3	13	41,560	3	14
	LILLY (ELI) 115	4,070	8	1	16	761	6	18	6	19	3	14	6	24	8	11	9	18	10	13	10	26,700	9	4
	WARNER-LAMBERT 120	3,908	9	12	6	340	11	15	11	9	12	13	9	34	3	7	14	18	8	20	7	33,000	7	(1)
	SCHERING-PLOUGH 147	2,969	10	10	9	390	9	23	3	13	9	11	10	23	10	7	13	19	6	24	5	22,400	10	3
	UPJOHN 156	2,746	11	9	15	353	10	16	9	13	10	11	11	19	11	10	10	17	13	(2)	15	21,300	11	4
	SQUIBB 166	2,586	12	20	2	425	8	19	5	16	5	14	7	30	6	13	6	21	5	11	12	18,077	12	8
	RORER GROUP 329	1,042	13	12	7	62	14	14	13	6	14	4	16	14	14	8	11	18	9	82	1	8,394	13	13
	ROBINS (A.H.) 346	934	14	9	14	58	15	–		6	13	5	14	–		8	12	14	15	26	4	6,464	14	1
	MARION LABORATORIES 389	752	15	26	1	150	13	55	1	20	2	27	1	39	2	27	1	41	1	(17)	16	3,441	15	13
	SHAKLEE 432	627	16	10	10	27	16	16	10	4	16	6	13	10	15	3	16	19	7	56	2	3,300	16	(30)

RANKED WITHIN INDUSTRY BY 11 MEASURES

INDUSTRY TABLE NUMBER / COMPANY 500 RANK	SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
									SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
	$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
TOTAL	61,118		--		8,282		–		–		–		–		–		–		–		457,751		–
MEDIAN	3,989		10		408		17		14		13		24		11		18		15		29,350		3
20 PUBLISHING, PRINTING 22 COMPANIES																							
TIME INC. 102	4,507	1	7	10	289	4	16	9	6	14	6	16	21	4	6	16	22	10	31	8	21,000	6	5
GANNETT 134	3,314	2	8	9	364	2	14	10	11	5	10	5	20	5	13	10	18	17	(6)	18	37,000	1	3
TIMES MIRROR 138	3,259	3	3	20	332	3	25	6	10	7	10	6	20	7	10	13	20	16	(6)	17	27,963	2	0
DONNELLY (R.R.) 149	2,878	4	16	4	205	8	(6)	16	7	11	9	8	16	12	13	8	21	14	9	11	24,500	3	11
TRIBUNE 181	2,335	5	8	8	210	7	49	2	9	9	7	12	18	11	–		–		(3)	15	14,500	9	4
KNIGHT-RIDDER 192	2,194	6	6	15	156	11	1	14	7	12	7	13	19	10	9	14	18	19	16	9	22,200	4	(7)
BERKSHIRE HATHAWAY 205	1,992	7	(8)	22	399	1	(70)	1	20	1	6	17	12	17	25	3	40	2	59	3	–		–
MCGRAW-HILL 223	1,818	8	4	19	186	9	13	11	10	6	11	4	20	6	12	12	22	11	33	7	16,255	8	2
NEW YORK TIMES 228	1,755	9	4	18	168	10	5	13	10	8	9	7	19	9	25	2	22	12	(12)	19	10,700	11	2
DOW JONES 238	1,603	10	22	3	228	6	12	12	14	3	11	3	20	8	17	5	21	13	1	14	9,086	12	1
WASHINGTON POST 269	1,368	11	4	17	269	5	44	3	20	2	19	1	31	1	21	4	26	6	14	10	6,300	16	(2)
SCRIPPS (E.W.) 293	1,214	12	6	14	70	13	18	8	6	15	5	18	11	18	–		–		–		11,400	10	(1)
DELUXE 296	1,196	13	26	2	143	12	(3)	15	12	4	18	2	25	2	17	6	25	7	6	12	16,628	7	8
AMERICAN GREETINGS 303	1,175	14	7	13	33	17	(47)	19	3	19	3	19	6	19	4	17	18	18	53	4	22,000	5	–
MACMILLAN 331	1,019	15	7	12	–		–		–		–		–		–		39	3	63	2	–		–
MEDIA GENERAL 386	756	16	6	16	9	20	(79)	20	1	20	1	20	3	20	(6)	18	24	8	(4)	16	7,903	13	(5)
MEREDITH 411	678	17	13	5	47	15	40	4	7	13	7	11	13	14	12	11	24	9	3	13	3,839	18	22
STANDARD REGISTER 413	669	18	1	21	38	17	(6)	17	6	16	9	9	13	15	27	1	29	5	(17)	20	6,355	15	1
COMM. CLEARING HOUSE 437	612	19	11	6	49	14	(6)	18	8	10	9	10	23	3	15	7	20	15	(21)	21	7,207	14	9
REYNOLDS & REYNOLDS 446	600	20	7	11	26	18	23	7	4	18	7	14	13	16	7	15	10	20	50	5	4,976	17	(13)
AFFILIATED PUBL. 477	534	21	9	7	(81)	21	(140)	21	(15)	21	(19)	21	(42)	21	–		47	1	33	6	3,020	20	3
BANTA (GEO.) 482	527	22	74	1	23	19	35	5	4	17	6	15	14	13	13	9	31	4	70	1	3,700	19	–
TOTAL	36,005				3,166																276,526		
MEDIAN	1,291		7		156		13		7		7		18		13		22		9		11,050		2
21 RUBBER PRODUCTS 11 COMPANIES																							
GOODYEAR TIRE 32	10,810	1	7	9	350	1	(55)	10	3	8	4	10	17	4	7	5	19	5	(12)	10	114,161	1	(0)
JOHNSON CONTROLS 144	3,100	2	16	5	104	3	16	6	3	7	5	9	12	9	5	8	16	8	48	3	28,900	2	7
PREMARK INT'L 178	2,397	3	9	8	105	2	47	1	4	6	6	6	14	8	–		–		[illegible]		24,000	3	5
RUBBERMAID 297	1,194	4	16	3	99	4	17	5	8	2	13	2	19	2	16	3	28	3	3	8	7,962	6	15
ARMTEK 301	1,180	5	[illegible]	11	8	11	(59)	11	1	11	1	11	3	11	(4)	10	–		–		8,403	4	(25)
FERRO 332	1,009	6	16	4	47	6	47	2	5	5	8	5	16	6	6	7	16	7	51	2	8,100	5	2
COOPER TIRE & RUBBER 391	748	7	12	6	41	7	34	4	5	4	9	4	16	5	19	2	38	1	59	1	6,031	7	5
MILLIPORE 433	622	8	18	2	55	5	14	7	9	1	9	3	15	7	11	4	10	9	(6)	9	5,832	8	12
CARLISLE 462	567	9	5	10	17	9	(8)	9	3	9	5	8	9	10	4	9	23	4	25	7	4,322	10	(10)
CONSTAR INT'L 464	566	10	24	1	14	10	46	3	2	10	6	7	17	3	6	6	17	6	26	6	4,000	11	(26)
STANDARD PRODUCTS 493	508	11	9	7	34	8	8	8	7	3	13	1	23	1	25	1	32	2	37	5	5,800	9	1
TOTAL	22,701				874																217,511		
MEDIAN	1,009		12		47		16		4		6		16		7		19		31		7,962		2
22 SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT 17 COMPANIES																							
EASTMAN KODAK 18	17,034	1	28	4	1,397	1	19	5	8	6	6	7	21	5	6	9	11	8	(4)	11	145,300	1	17
XEROX 22	16,441	2	59	1	388	3	(33)	10	2	11	1	12	7	11	(5)	10	7	11	9	6	113,245	2	14
MINNESOTA MINING 34	10,581	3	12	9	1,154	2	26	2	11	2	13	3	21	3	8	6	12	7	(0)	10	82,818	3	1
BAXTER INTERNATIONAL 64	6,861	4	10	10	388	3	17	6	6	7	5	9	10	10	7	7	7	10	(21)	15	64,000	4	4
LITTON INDUSTRIES 96	4,864	5	10	11	167	5	21	4	3	10	3	10	14	8	–		17	4	(0)	9	55,000	5	1
HENLEY GROUP 148	2,903	6	(17)	16	(47)	15	–		(2)	15	(2)	15	(3)	14	–		–		9	5	6,700	14	–
POLAROID 218	1,863	7	6	14	(23)	14	(119)	11	(1)	14	(1)	13	(2)	13	–		7	12	59	1	11,613	9	(15)
BECTON DICKINSON 220	1,847	8	17	6	162	6	9	9	9	5	8	6	17	6	11	4	15	6	4	8	20,600	7	4
PERKIN-ELMER 258	1,429	9	7	12	72	10	–		5	8	5	8	10	9	6	8	8	9	5	7	10,941	10	(23)
TEKTRONIX 261	1,412	10	1	15	(17)	13	(133)	12	(1)	13	(2)	14	(3)	15	–		0	14	(16)	13	16,085	8	(6)
EG&G 265	1,406	11	14	8	69	11	24	3	5	9	13	4	21	4	14	3	16	5	(12)	12	25,000	6	9
BAUSCH & LOMB 339	978	12	16	7	98	7	15	8	10	4	8	5	16	7	10	5	20	2	28	4	10,000	11	20
COOPER COS. 349	916	13	46	2	(207)	16	(499)	13	(23)	16	(18)	16	(456)	16	–		–		(36)	16	5,470	16	(42)
BARD (C.R.) 383	758	14	18	5	79	9	26	1	10	3	15	1	24	1	21	1	30	1	35	2	8,250	12	9

INDUSTRY TABLE NUMBER / COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																						
	SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
									SALES		ASSETS		EQUITY		1978-88 annual growth rate		1978-88 annual average		1988				
	$ Mil.	Rank	% change from 1987	Rank	$ Mil.	Rank	% change from 1987	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	Number	Rank	% change from 1987
MEDTRONIC 424	653	15	30	3	87	8	17	7	13	1	14	2	22	2	19	2	19	3	(16)	14	5,875	15	19
BELL & HOWELL 447	600	16	(17)	17	–		–		–		–		–		–		–		–		–		–
FOXBORO 476	540	17	7	13	10	12	–		2	12	2	11	5	12	(11)	11	6	13	35	3	7,200	13	2
TOTAL	71,085				3,776																588,097		
MEDIAN	1,429		12		83		17		5		5		12		8		11		2		13,849		4
23 SOAPS, COSMETICS 10 COMPANIES																							
PROCTER & GAMBLE 15	19,336	1	14	3	1,020	1	212	2	5	5	7	6	16	6	7	6	12	6	6	5	77,000	1	5
UNILEVER U.S. 63	6,956	2	30	1	133	3	86	3	2	7	2	7	7	7	–		–		–		24,044	4	–
COLGATE-PALMOLIVE 83	5,484	3	(3)	10	318	2	488	1	6	4	10	4	28	1	8	5	17	4	24	2	24,700	3	(34)
AVON PRODUCTS 132	3,365	4	2	9	(405)	9	(354)	9	(12)	9	(16)	9	(169)	9	–		(2)	7	(19)	7	28,400	2	(18)
REVLON GROUP 172	2,477	5	3	8	–		–		–		–		–		–		–		–		–		–
CLOROX 286	1,260	6	12	6	133	4	26	5	11	2	11	3	19	4	12	3	25	3	17	3	4,800	7	7
INT'L FLAVORS 367	840	7	13	5	129	5	20	6	15	1	15	2	19	5	8	4	12	5	15	4	4,177	8	1
ALBERTO CULVER 443	605	8	18	2	27	7	48	4	4	6	9	5	20	3	24	1	34	1	79	1	4,900	6	7
FABERGE 453	593	9	13	4	2	8	(94)	8	0	8	0	8	(0)	8	–		–		–		10,200	5	55
NOXELL 484	522	10	7	7	51	6	17	7	10	3	15	1	21	2	17	2	29	2	(7)	6	2,249	9	9
TOTAL	41,436				1,407																180,470		
MEDIAN	1,868		12		129		26		5		9		19		10		17		15		10,200		6
24 TEXTILES 11 COMPANIES																							
ARMSTRONG WORLD IND. 160	2,680	1	13	2	163	1	8	6	6	2	8	2	16	3	12	4	21	5	12	6	25,941	3	8
BURLINGTON HOLDINGS 174	2,452	2	(25)	11	(24)	10	–		(1)	10	(1)	10	(25)	10	–		–		–		28,000	2	(36)
WEST POINT-PEPPERELL 195	2,151	3	4	7	84	2	18	3	4	4	3	8	11	6	5	8	25	4	74	1	41,200	1	30
SPRINGS INDUSTRIES 222	1,825	4	10	4	53	4	(5)	7	3	8	5	6	10	8	9	7	21	6	7	7	23,400	4	1
FIELDCREST CANNON 274	1,338	5	(4)	9	11	9	–		1	9	1	9	4	9	(10)	9	11	8	43	3	22,041	5	(6)
DWG 306	1,168	6	(4)	8	36	5	99	1	3	7	4	7	23	1	13	3	18	7	–		17,050	6	(1)
SHAW INDUSTRIES 344	958	7	38	1	34	6	18	2	4	6	6	5	22	2	20	1	34	1	49	2	10,400	8	59
UNITED MERCHANTS 393	723	8	(5)	10	(37)	11	–		(5)	11	(8)	11	(60)	11	–		(8)	9	(24)	9	6,500	10	(28)
DIXIE YARNS 441	606	9	4	6	21	8	(18)	8	4	5	6	4	11	7	10	6	–		18	5	7,700	9	(21)
GUILFORD MILLS 457	578	10	7	5	27	7	12	5	5	3	7	3	14	5	11	5	27	2	(3)	8	3,970	11	6
RUSSELL 480	531	11	11	3	54	3	16	4	10	1	10	1	16	4	14	2	26	3	32	4	12,650	7	25
TOTAL	15,011				422																198,852		
MEDIAN	1,168		4		34		14		4		5		11		11		21		18		17,050		1
25 TOBACCO 7 COMPANIES																							
PHILIP MORRIS 10	25,860	1	16	4	2,337	1	27	2	9	3	6	3	30	3	19	1	24	4	24	5	155,000	1	37
AMERICAN BRANDS 58	7,477	2	18	3	580	2	11	4	8	4	5	5	22	4	11	5	26	3	54	2	48,800	2	13
UNIVERSAL 177	2,414	3	15	5	61	5	8	5	3	5	6	4	17	6	12	4	20	5	11	6	20,000	4	43
LORILLARD 263	1,410	4	8	6	368	3	0	6	26	2	40	1	82	1	–		–		–		4,250	6	(9)
STANDARD COMMERCIAL 390	750	5	21	2	17	6	28	1	2	7	2	7	12	7	7	6	20	6	26	4	6,500	5	14
UST 440	607	6	7	7	162	4	24	3	27	1	27	2	36	2	18	2	29	2	5[illegible]	1	3,284	7	(1)
DIBRELL BROTHERS 470	555	7	80	1	13	7	–		2	6	4	6	20	5	16	3	31	1	48	3	24,600	3	606
TOTAL	39,073				3,538																262,434		
MEDIAN	1,410		16		162		17		8		6		22		14		25		37		20,000		14
26 TOYS, SPORTING GOODS 2 COMPANIES																							
HASBRO 273	1,340	1	1	1	72	1	50	1	5	1	7	1	10	2	–		54	1	19	2	8,200	2	(1)
MATTEL 337	990	2	(3)	2	36	2	–		4	2	5	2	27	1	(7)	1	4	2	38	1	10,800	1	(15)
TOTAL	2,330				108																19,000		
27 TRANSPORTATION EQUIPMENT 6 COMPANIES																							
BRUNSWICK 137	3,282	1	6	4	193	1	14	4	6	1	9	2	20	1	23	1	31	1	17	4	20,500	1	0
OUTBOARD MARINE 237	1,605	2	25	2	78	2	26	2	5	2	7	3	13	3	10	3	18	4	45	2	12,903	2	11
FLEETWOOD ENTERPRISES 266	1,406	3	12	3	48	3	21	3	3	3	9	1	14	2	10	2	20	3	49	1	10,500	3	5
TRINITY INDUSTRIES 431	633	4	29	1	13	5	225	1	2	5	2	5	6	4	(2)	5	25	2	[illegible]	3	6,800	5	13
AVONDALE INDUSTRIES 454	592	5	(13)	5	4	6	(3)	5	1	6	1	6	2	5	–		–		–		8,500	4	–
MINSTAR 486	518	6	(41)	6	15	4	–		3	4	4	4	–		8	4	–		–		4,880	6	(35)
TOTAL	8,037				351																72,083		
MEDIAN	1,019		9		31		21		3		5		13		10		22		39		9,500		5

INDUSTRY MEDIANS

RETURN ON SALES

	1988	1987
PHARMACEUTICALS	13.5%	13.2%
FOREST PRODUCTS	8.7	6.5
BEVERAGES	8.0	7.0
TOBACCO	7.8	8.3
PUBLISHING, PRINTING	7.1	8.4
CHEMICALS	6.9	6.0
COMPUTERS (INCL. OFFICE EQUIP.)	6.2	8.2
METALS	6.2	4.3
FURNITURE	5.6	5.2
SOAPS, COSMETICS	5.3	4.9
ELECTRONICS	5.1	5.0
SCIENTIFIC AND PHOTO. EQUIP.	5.0	8.3
PETROLEUM REFINING	4.7	3.4
METAL PRODUCTS	4.6	5.4
BUILDING MATERIALS	4.5	6.8
RUBBER PRODUCTS	4.4	5.6
APPAREL	4.3	3.9
INDUSTRIAL AND FARM EQUIP.	4.3	3.3
AEROSPACE	3.6	3.7
MOTOR VEHICLES AND PARTS	3.5	3.5
TEXTILES	3.5	4.1
MINING, CRUDE-OIL PRODUCTION	3.3	3.3
TRANSPORTATION EQUIPMENT	3.1	3.1
FOOD	2.8	3.5
THE 500 MEDIAN	5.5	5.1

RETURN ON ASSETS

	1988	1987
PHARMACEUTICALS	13.1%	12.2%
SOAPS, COSMETICS	8.9	6.7
FURNITURE	8.8	8.7
FOREST PRODUCTS	8.4	6.7
METALS	8.2	5.3
CHEMICALS	7.5	6.8
PUBLISHING, PRINTING	7.3	8.5
BEVERAGES	6.8	6.0
FOOD	6.7	6.5
RUBBER PRODUCTS	6.4	8.3
APPAREL	6.1	7.0
ELECTRONICS	6.1	6.6
TOBACCO	6.0	7.2
METAL PRODUCTS	5.8	7.9
COMPUTERS (INCL. OFFICE EQUIP.)	5.6	8.3
INDUSTRIAL AND FARM EQUIP.	5.4	5.4
TRANSPORTATION EQUIPMENT	5.4	7.4
PETROLEUM REFINING	5.3	3.1
BUILDING MATERIALS	4.9	7.4
SCIENTIFIC AND PHOTO. EQUIP.	4.9	7.8
AEROSPACE	4.9	5.0
TEXTILES	4.7	6.3
MOTOR VEHICLES AND PARTS	3.9	5.1
MINING, CRUDE-OIL PRODUCTION	1.3	2.8
THE 500 MEDIAN	6.8	6.6

RETURN ON STOCKHOLDERS' EQUITY

	1988	1987
PHARMACEUTICALS	23.6%	22.7%
BEVERAGES	22.8	14.0
TOBACCO	22.5	20.0
FOREST PRODUCTS	19.8	14.7
SOAPS, COSMETICS	18.5	16.2
METALS	18.4	11.1
PUBLISHING, PRINTING	17.7	18.9
APPAREL	17.5	14.1
CHEMICALS	16.8	14.2
ELECTRONICS	16.8	14.1
FURNITURE	15.9	15.2
RUBBER PRODUCTS	15.8	13.1
FOOD	15.7	16.1
PETROLEUM REFINING	15.3	10.2
COMPUTERS (INC. OFFICE EQUIP.)	14.7	14.6
MOTOR VEHICLES AND PARTS	14.5	11.6
TRANSPORTATION EQUIPMENT	13.4	23.1
INDUSTRIAL AND FARM EQUIP.	12.7	11.2
METAL PRODUCTS	12.7	14.3
SCIENTIFIC AND PHOTO. EQUIP.	12.1	16.3
AEROSPACE	11.4	11.3
TEXTILES	10.8	12.8
MINING, CRUDE-OIL PRODUCTION	2.4	7.0
BUILDING MATERIALS	−3.3	13.4
THE 500 MEDIAN	16.2	14.4

INDUSTRY MEDIANS

CHANGES IN SALES

INCREASES

COMPUTERS (INCLUDES OFFICE EQUIPMENT)	19.1%
INDUSTRIAL AND FARM EQUIPMENT	16.9
METALS	16.2
TOBACCO	16.1
FURNITURE	15.8
CHEMICALS	15.7
FOREST PRODUCTS	13.8
MOTOR VEHICLES AND PARTS	13.2
ELECTRONICS	13.0
SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT	12.2
RUBBER PRODUCTS	12.4
SOAPS, COSMETICS	12.2
PHARMACEUTICALS	10.3
METAL PRODUCTS	9.4
TRANSPORTATION EQUIPMENT	9.0
BEVERAGES	8.9
APPAREL	8.7
FOOD	8.2
AEROSPACE	8.0
BUILDING MATERIALS	7.1
PUBLISHING, PRINTING	6.6
PETROLEUM REFINING	5.3
TEXTILES	4.5

DECREASES

MINING, CRUDE-OIL PRODUCTION	4.1%

CHANGES IN PROFITS

INCREASES

METALS	110.4%
PETROLEUM REFINING	62.7
FOREST PRODUCTS	45.0
CHEMICALS	35.0
FURNITURE	32.9
SOAPS, COSMETICS	26.4
INDUSTRIAL AND FARM EQUIPMENT	25.2
TRANSPORTATION EQUIPMENT	21.4
ELECTRONICS	18.9
METAL PRODUCTS	17.8
TOBACCO	17.4
SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT	17.2
PHARMACEUTICALS	16.8
BEVERAGES	16.5
RUBBER PRODUCTS	15.5
FOOD	14.6
TEXTILES	13.9
MINING, CRUDE-OIL PRODUCTION	13.8
MOTOR VEHICLES AND PARTS	13.7
COMPUTERS (INCLUDES OFFICE EQUIPMENT)	12.6
PUBLISHING, PRINTING	12.6
AEROSPACE	11.6

DECREASES

BUILDING MATERIALS	17.7%
APPAREL	3.4

TOTAL RETURN TO INVESTORS, 1988

TRANSPORTATION EQUIPMENT	39.2%
TOBACCO	36.9
RUBBER PRODUCTS	31.3
TOYS, SPORTING GOODS	28.5
FOOD	24.9
BUILDING MATERIALS	24.9
APPAREL	24.1
PETROLEUM REFINING	22.9
MOTOR VEHICLES AND PARTS	22.2
BEVERAGES	21.2
INDUSTRIAL AND FARM EQUIPMENT	20.3
AEROSPACE	19.5
TEXTILES	18.4
METALS	16.0
SOAPS, COSMETICS	15.0
PHARMACEUTICALS	14.7
FOREST PRODUCTS	12.0
CHEMICALS	11.0
METAL PRODUCTS	9.9
MINING, CRUDE-OIL PRODUCTION	9.2
PUBLISHING, PRINTING	8.6
FURNITURE	8.0
JEWELRY, SILVERWARE	6.9
ELECTRONICS	4.8
SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT	1.6
COMPUTERS (INCLUDES OFFICE EQUIP.)	−11.5
THE 500 MEDIAN	14.1

INDUSTRY MEDIANS

TOTAL RETURN TO INVESTORS 1978-88 ANNUAL AVERAGE

TOYS, SPORTING GOODS	29.1%
FOOD	26.4
TOBACCO	25.0
APPAREL	22.8
TRANSPORTATION EQUIPMENT	22.3
PUBLISHING, PRINTING	22.1
JEWELRY, SILVERWARE	21.5
TEXTILES	21.3
FURNITURE	20.7
BEVERAGES	20.7
RUBBER PRODUCTS	18.8
CHEMICALS	18.3
PHARMACEUTICALS	17.9
MOTOR VEHICLES AND PARTS	17.7
FOREST PRODUCTS	17.4
SOAPS, COSMETICS	17.2
METAL PRODUCTS	16.9
ELECTRONICS	14.8
AEROSPACE	14.4
PETROLEUM REFINING	13.3
BUILDING MATERIALS	12.7
COMPUTERS (INCLUDES OFFICE EQUIP.)	11.9
METALS	11.6
INDUSTRIAL AND FARM EQUIPMENT	11.3
SCIENTIFIC AND PHOTO. EQUIP.	11.2
MINING, CRUDE-OIL PRODUCTION	10.4
THE 500 MEDIAN	17.5

SALES PER DOLLAR OF STOCKHOLDERS' EQUITY

FOOD	$5.33
TOYS, SPORTING GOODS	4.74
MOTOR VEHICLES AND PARTS	3.96
APPAREL	3.90
AEROSPACE	3.64
SOAPS, COSMETICS	3.45
RUBBER PRODUCTS	3.42
JEWELRY, SILVERWARE	3.39
TEXTILES	3.37
TOBACCO	3.37
PETROLEUM REFINING	3.07
METALS	3.06
TRANSPORTATION EQUIPMENT	2.96
INDUSTRIAL AND FARM EQUIPMENT	2.92
METAL PRODUCTS	2.83
FURNITURE	2.67
ELECTRONICS	2.60
CHEMICALS	2.46
COMPUTERS (INCLUDES OFFICE EQUIP.)	2.38
FOREST PRODUCTS	2.38
BEVERAGES	2.35
BUILDING MATERIALS	2.17
SCIENTIFIC AND PHOTOGRAPHIC EQUIP.	2.14
PUBLISHING, PRINTING	2.11
PHARMACEUTICALS	1.91
MINING, CRUDE-OIL PRODUCTION	1.66
THE 500 MEDIAN	2.93

SALES PER EMPLOYEE

PETROLEUM REFINING	$469,418
MINING, CRUDE-OIL PRODUCTION	290,207
SOAPS, COSMETICS	222,037
CHEMICALS	204,845
BEVERAGES	203,017
FOOD	197,863
METALS	172,213
FOREST PRODUCTS	168,728
BUILDING MATERIALS	158,329
TOBACCO	153,215
PHARMACEUTICALS	132,117
TOYS, SPORTING GOODS	127,557
RUBBER PRODUCTS	124,031
METAL PRODUCTS	120,835
PUBLISHING, PRINTING	117,024
AEROSPACE	112,228
MOTOR VEHICLES AND PARTS	111,211
TRANSPORTATION EQUIPMENT	110,673
SCIENTIFIC AND PHOTO. EQUIP.	109,203
COMPUTERS (INCL. OFFICE EQUIP.)	108,959
INDUSTRIAL AND FARM EQUIPMENT	102,367
ELECTRONICS	95,107
FURNITURE	90,319
JEWELRY, SILVERWARE	85,094
TEXTILES	78,756
APPAREL	56,356
THE 500 MEDIAN	137,888

INDUSTRY TOTALS

RANKED BY SIX MEASURES

	SALES		PROFITS		ASSETS		STOCKHOLDERS' EQUITY		MARKET VALUE		EMPLOYEES	
	$ MIL	RANK	$ MIL	RANK	$ MIL	RANK	$ MIL	RANK	$ MIL	RANK	NUMBER	RANK
PETROLEUM REFINING	333,786	1	19,974	1	338,960	2	131,136	1	184,771	1	621,194	7
MOTOR VEHICLES AND PARTS	286,087	2	12,301	3	384,819	1	72,464	2	68,323	7	1,602,588	1
FOOD	169,033	3	6,822	8	110,267	6	37,589	7	94,233	6	1,060,252	4
ELECTRONICS	167,722	4	9,232	5	211,339	3	59,321	5	117,851	4	1,505,505	2
CHEMICALS	162,531	5	12,430	2	151,751	4	61,204	4	104,816	5	852,553	6
COMPUTERS (INCL. OFFICE EQUIP.)	130,151	6	10,680	4	136,485	5	71,307	3	129,985	3	1,034,564	5
AEROSPACE	125,226	7	4,896	9	97,836	7	31,106	8	45,010	11	1,149,643	3
FOREST PRODUCTS	93,478	8	7,124	7	92,881	8	39,043	6	58,244	8	536,136	10
INDUSTRIAL AND FARM EQUIPMENT	72,730	9	3,205	13	64,804	10	23,741	11	38,108	13	600,253	8
SCIENTIFIC AND PHOTO. EQUIP.	71,085	10	3,776	10	85,734	9	29,821	10	56,353	9	588,097	9
METALS	61,124	11	1,429	15	58,027	12	15,888	14	26,222	15	365,736	12
PHARMACEUTICALS	61,118	12	8,282	6	61,591	11	29,911	9	136,616	2	457,751	11
SOAPS, COSMETICS	41,436	13	1,407	16	31,041	16	11,638	16	24,281	16	180,470	20
BEVERAGES	39,441	14	3,244	12	40,331	15	17,167	13	43,615	12	344,034	13
TOBACCO	39,073	15	3,538	11	52,476	13	11,672	15	36,484	14	262,434	15
PUBLISHING, PRINTING	36,005	16	3,166	14	41,065	14	18,797	12	53,007	10	276,526	14
BUILDING MATERIALS	28,633	17	(584)	26	26,162	18	3,699	22	8,639	20	234,983	16
METAL PRODUCTS	28,068	18	735	18	27,062	17	6,612	18	16,841	17	230,620	17
RUBBER PRODUCTS	22,701	19	874	17	16,074	20	5,741	19	9,715	19	217,511	18
TEXTILES	15,011	20	422	21	12,043	21	3,827	21	6,271	22	198,852	19
FURNITURE	9,861	21	602	19	7,035	22	3,925	20	6,595	21	115,922	22
APPAREL	9,075	22	457	20	6,910	23	2,623	23	5,551	23	142,696	21
MINING, CRUDE-OIL PRODUCTION	8,797	23	399	22	16,767	19	6,644	17	13,584	18	31,576	24
TRANSPORTATION EQUIPMENT	8,037	24	351	23	5,119	24	2,113	24	3,600	24	72,083	23
TOYS, SPORTING GOODS	2,330	25	108	24	1,805	25	834	25	1,471	25	19,000	25
JEWELRY, SILVERWARE	596	26	89	25	407	26	176	26	685	26	7,000	26
TOTAL	2,023,135		114,960		2,078,812		698,000		1,290,873		12,707,979	

THE FORTUNE

COMPANY	SALES RANK
A	
ABBOTT LABORATORIES	94
ADVANCED MICRO DEVICES	311
AFFILIATED PUBL.	477
AG PROCESSING	351
AGWAY	124
AIR PRODS. & CHEMICALS	176
ALBERTO CULVER	443
ALLEGHENY INT'L	341
ALLEGHENY LUDLUM	294
ALLIED PRODUCTS	458
ALLIED-SIGNAL	29
ALUMINUM CO. OF AMERICA	40
AMAX	117
AMDAHL	226
AMERADA HESS	110
AMERICAN BRANDS	58
AMERICAN CYANAMID	101
AMERICAN GREETINGS	303
AMERICAN HOME PRODUCTS	81
AMER. MAIZE-PRODUCTS	474
AMERICAN PETROFINA	164
AMERICAN STANDARD	123
AMETEK	402
AM INTERNATIONAL	280
AMOCO	12
AMP	161
AMSTAR	325
AMSTED INDUSTRIES	343
ANCHOR GLASS	340
ANHEUSER-BUSCH	46
APOLLO COMPUTER	423
APPLE COMPUTER	114
ARCHER DANIELS MIDLAND	65
ARISTECH CHEMICAL	321
ARMCO	140
ARMSTRONG WORLD IND.	160
ARMTEK	301
ARVIN INDUSTRIES	271
ASARCO	207
ASHLAND OIL	55
ATARI	400
ATLANTIC RICHFIELD	17
AVERY	479
AVERY INTERNATIONAL	244
AVONDALE INDUSTRIES	454
AVON PRODUCTS	132
B	
BAKER HUGHES	184
BALL	318
BANNER INDUSTRIES	473
BANTA (GEO.)	482
BARD (C.R.)	383
BASF	93
BAUSCH & LOMB	339
BAXTER INTERNATIONAL	64
BAYER USA	99
BEATRICE	57
BECTON DICKINSON	220
BELL & HOWELL	447
BEMIS	319
BERKSHIRE HATHAWAY	205
BETHLEHEM STEEL	82
BIG THREE INDUSTRIES	483
BLACK & DECKER	187
BOEING	19
BOISE CASCADE	112
BORDEN	59
BORDEN CHEMICALS	472
BORG-WARNER	142
BOWATER	262
BRIGGS & STRATTON	350
BRISTOL-MYERS	73
BROWN-FORMAN	320
BRUNSWICK	137
BURLINGTON HOLDINGS	174
BURLINGTON RESOURCES	194
BUTLER MANUFACTURING	426
C	
CABOT	232
CALMAT	422
CAMERON IRON WORKS	498
CAMPBELL SOUP	95
CARLISLE	462
CARPENTER TECHNOLOGY	469
CATERPILLAR	35
CENTRAL SOYA	193
CERTAINTEED	284
CF INDUSTRIES	345
CHAMPION INTERNATIONAL	91
CHAMPION SPARK PLUG	374
CHEMED	[illegible]00
CHESAPEAKE	399
CHEVRON	11
CHICAGO PACIFIC	250
CHRYSLER	7
CINCINNATI MILACRON	364
CLAIBORNE (LIZ)	299
CLARK EQUIPMENT	283
CLOROX	286
COASTAL	54
COCA-COLA	49
COCA-COLA ENTERPRISES	121
COLEMAN	419
COLGATE-PALMOLIVE	83
COLT INDUSTRIES	234
COMBUSTION ENGINEERING	131
COMMERCE CLEARING HOUSE	437
COMPAQ COMPUTER	202
CONAGRA	44
CONSOLIDATED PAPERS	355
CONSTAR INT'L	464
CONTROL DATA	125
COOPER COS.	349
COOPER INDUSTRIES	107
COOPER TIRE & RUBBER	391
COORS (ADOLPH)	249
CORNING GLASS WORKS	198
CPC INTERNATIONAL	100
CRANE	255
CRAY RESEARCH	385
CROWN CENTRAL	308
CROWN CORK & SEAL	221
CUMMINS ENGINE	135
CYCLOPS INDUSTRIES	289
CYPRUS MINERALS	275
D	
DANA	90
DANAHER	388
DATA GENERAL	272
DEAN FOODS	247
DEERE	87
DELUXE	296
DENNISON MANUFACTURING	394
DEXTER	369
DIAMOND SHAMROCK R&M	224
DIBRELL BROTHERS	470
DIGITAL EQUIPMENT	30
DIXIE YARNS	441
DONNELLY (R.R.)	149
DOVER	208
DOW CHEMICAL	21
DOW CORNING	252
DOW JONES	238
DRESSER INDUSTRIES	118
DR PEPPER/SEVEN-UP	491
DU PONT (E.I.) DE NEMOURS	9
DWG	306
E	
EAGLE-PICHER INDUSTRIES	379
EASTMAN KODAK	18
EATON	108
ECHLIN	281
EG&G	265
EMERSON ELECTRIC	66
EMHART	155
ENGELHARD	180
ESSELTE BUSINESS SYSTEMS	267
E-SYSTEMS	257
ETHYL	158
EXXON	3
F	
FABERGE	453
FAIRCHILD INDUSTRIES	455
FARMERS UNION	287
FARMLAND INDUSTRIES	153
FEDERAL-MOGUL	302
FEDERAL PAPER BOARD	313
FERRO	332
FIELDCREST CANNON	274
FIGGIE INTERNATIONAL	295
FINEVEST FOODS	429
FLEETWOOD ENTERPRISES	266
FLOWERS INDUSTRIES	392
FMC	136
FORD MOTOR	2
FORT HOWARD	219
FOXBORO	476
FREEPORT-MCMORAN	211
FRUEHAUF	196
FRUIT OF THE LOOM	333
FULLER (H.B.)	408
FUQUA INDUSTRIES	336
G	
GAF	342
GANNETT	134
GAYLORD CONTAINER	412
GENCORP	204
GENERAL DYNAMICS	41
GENERAL ELECTRIC	5
GENERAL INSTRUMENT	277
GENERAL MILLS	76
GENERAL MOTORS	1
GENERAL SIGNAL	227
GEORGIA GULF	324
GEORGIA-PACIFIC	43
GERBER PRODUCTS	307
GILLETTE	128
GLATFELTER (P.H.)	461
GOLD KIST	328
GOODRICH (B.F.)	169
GOODYEAR TIRE	32
GRACE (W.R.)	69
GREAT LAKES CHEMICAL	435
GREAT NORTH. NEKOOSA	127
GROW GROUP	495
GRUMMAN	126
GUILFORD MILLS	457
H	
HANDY & HARMAN	418
HANNA (M.A.)	330
HANSON INDUSTRIES NA	67
HARLEY-DAVIDSON	384
HARNISCHFEGER IND.	298
HARRIS	203
HARSCO	282
HARTMARX	304
HARVARD INDUSTRIES	410
HASBRO	273
HEINZ (H.J.)	89
HENLEY GROUP	148
HERCULES	154
HERSHEY FOODS	167
HEWLETT-PACKARD	39
HILLENBRAND IND.	359
HILLSBOROUGH	171
HIMONT	230
HOECHST CELANESE	78
HOLLY FARMS	243
HONEYWELL	60
HON INDUSTRIES	459
HORMEL (GEO. A.)	186
HUBBELL	436
I	
IBC HOLDINGS	365
ILLINOIS TOOL WORKS	213
IMO INDUSTRIES	407
INGERSOLL-RAND	146
INLAND STEEL IND.	116
INSILCO	387
INSPIRATION RESOURCES	270
INTEL	150
INTERCO	133
INTERGRAPH	372
INTERLAKE	356
INT'L BUSINESS MACHINES	4
INTERNATIONAL CONTROLS	401
INTERNATIONAL FLAVORS	367
INTERNATIONAL MIN. & CHEM.	254
INTERNATIONAL MULTIFOODS	231
INTERNATIONAL PAPER	42
J	
JAMES RIVER	92
JEFFERSON SMURFIT	288
JEPSON	467
JOHNSON CONTROLS	144
JOHNSON & JOHNSON	45
JOSTENS	450
J.P. INDUSTRIES	475
K	
KAMAN	381
KELLOGG	106

ALPHABETICAL INDEX

KELLWOOD 404
KERR-MCGEE 157
KIMBALL INTERNATIONAL 481
KIMBERLY-CLARK 85
KNIGHT-RIDDER 192

L

LAFARGE 279
LAND O'LAKES 179
LEGGETT & PLATT 371
LESLIE FAY 409
LILLY (ELI) 115
LITTON INDUSTRIES 96
LOCKHEED 33
LONE STAR TECHNOLOGIES 406
LONGVIEW FIBRE 421
LORAL 256
LORILLARD 263
LOUISIANA LAND & EXPL. 395
LOUISIANA-PACIFIC 217
LPL INVESTMENT GROUP 425
LTV 56
LUBRIZOL 312
LUKENS 442

M

MACK TRUCKS 199
MACMILLAN 331
MAGMA COPPER 439
MAGNETEK 352
MANVILLE 190
MAPCO 225
MARION LABORATORIES 389
MARTIN MARIETTA 77
MASCO 175
MASCO INDUSTRIES 236
MATTEL 337
MAXUS ENERGY 460
MAXXAM 485
MAYTAG 216
MCCORMICK 300
MCDERMOTT 206
MCDONNELL DOUGLAS 25
MCGRAW-HILL 223
MEAD 103
MEDIA GENERAL 386
MEDTRONIC 424
MEMOREX TELEX 358
MERCK 74
MEREDITH 411
MID-AMERICA DAIRYMEN 235
MILLER (HERMAN) 398
MILLIPORE 433
MINISCRIBE 444
MINNESOTA MINING & MFG. 34
MINSTAR 486
MITCHELL ENERGY 466
MOBIL 6
MOHASCO 373
MOLEX 497
MONSANTO 51
MORTON THIOKOL 183
MOTOROLA 52
MURPHY OIL 253

N

NACCO INDUSTRIES 434
NALCO CHEMICAL 335
NATIONAL COOP. REFINERY 448
NATIONAL GYPSUM 292
NATIONAL SEMICONDUCTOR 173
NATIONAL SERVICE INDUSTRIES 260
NATIONAL STEEL 165
NAVISTAR INT'L 113
NCH 499
NCR 72
NERCO 416
NEWELL 338
NEW YORK TIMES 228
NORTEK 259
NORTH AMERICAN PHILIPS 84
NORTHROP 75
NORTON 264
NOXELL 484
NUCOR 323

O

OCCIDENTAL PETROLEUM 14
OCEAN SPRAY 382
OHIO MATTRESS 417
OLIN 185
OUTBOARD MARINE 237
OWENS-CORNING 151
OWENS-ILLINOIS 129
OXFORD INDUSTRIES 456

P

PACCAR 143
PACIFIC RESOURCES 361
PARKER HANNIFIN 189
PENN CENTRAL 248
PENNWALT 291
PENNZOIL 201
PENTAIR 370
PEPSICO 26
PERKIN-ELMER 258
PFIZER 86
PHELPS DODGE 182
PHILIP MORRIS 10
PHILIPS INDUSTRIES 405
PHILLIPS PETROLEUM 31
PHILLIPS-VAN HEUSEN 463
PILGRIM'S PRIDE 496
PILLSBURY 70
PITNEY BOWES 162
PITTWAY 377
POLAROID 218
POPE & TALBOT 488
POTLATCH 317
PPG INDUSTRIES 79
PRAIRIE FARMS DAIRY 490
PREMARK INT'L 178
PRIME COMPUTER 241
PROCTER & GAMBLE 15

Q

QUAKER OATS 88
QUAKER STATE 363
QUANTUM CHEMICAL 139

R

RALSTON PURINA 71
RAYCHEM 315
RAYTHEON 53
RELIANCE ELECTRIC 246
REVLON GROUP 172
REXENE 397
REYNOLDS METALS 80
REYNOLDS & REYNOLDS 446
RICELAND FOODS 430
RJR NABISCO 20
ROBERTSON (H.H.) 49
ROBINS (A.H.) 346
ROCKWELL INTERNATIONAL 28
ROHM & HAAS 168
ROHR INDUSTRIES 353
RORER GROUP 329
RUBBERMAID 297
RUSSELL 480

S

SARA LEE 36
SAVANNAH FOODS & IND. 347
SCHERING-PLOUGH 147
SCHULMAN (A.) 449
SCIENTIFIC-ATLANTA 492
SCI SYSTEMS 376
SCOTT PAPER 98
SCRIPPS (E.W.) 293
SEAGATE TECHNOLOGY 283
SEAGRAM (JOS. E.) 121
SEQUA 210
SHAKLEE 432
SHAW INDUSTRIES 344
SHELLER-GLOBE 368
SHELL OIL 13
SHERWIN-WILLIAMS 209
SIPCO 141
SMITH (A.O.) 322
SMITHFIELD FOODS 348
SMITHKLINE BECKMAN 97
SNAP-ON TOOLS 366
SONOCO PRODUCTS 240
SOUTHDOWN 445
SPRAGUE TECHNOLOGIES 487
SPRINGS INDUSTRIES 222
SPX 360
SQUARE D 233
SQUIBB 166
SSMC 414
STANDARD COMMERCIAL 390
STANDARD PRODUCTS 493
STANDARD REGISTER 413
STANLEY WORKS 215
STERLING CHEMICALS 403
STONE CONTAINER 122
STORAGE TECHNOLOGY 362
SUDBURY 478
SUN 48
SUN-DIAMOND GROWERS 471
SUNDSTRAND 251
SUN MICROSYSTEMS 327

T

TAMBRANDS 465
TANDEM COMPUTERS 278
TECUMSEH PRODUCTS 316
TEKTRONIX 261
TELEDYNE 105
TEMPLE-INLAND 200
TENNECO 24
TEXACO 8
TEXAS INDUSTRIES 428
TEXAS INSTRUMENTS 68
TEXTRON 61
THOMAS & BETTS 489
THORN APPLE VALLEY 452
TIME INC. 102
TIMES MIRROR 138
TIMKEN 245
TORO 438
TOSCO 309
TRIANGLE INDUSTRIES 111
TRIBUNE 181
TRINITY INDUSTRIES 431
TRINOVA 214
TRW 62
TYCO LABORATORIES 239
TYLER 334
TYSON FOODS 212

U

UIS 468
UNILEVER U.S. 63
UNION CAMP 163
UNION CARBIDE 50
UNION TEXAS 310
UNISYS 38
UNITED BRANDS 130
UNITED MERCHANTS & MFRS. 393
UNITED TECHNOLOGIES 16
UNIVERSAL 177
UNIVERSAL FOODS 396
UNOCAL 47
UPJOHN 156
USG 152
UST 440
USX 23

V

VALERO ENERGY 378
VALHI 188
VALMONT INDUSTRIES 415
VARIAN ASSOCIATES 305
VF 170
VISTA CHEMICAL 375
VULCAN MATERIALS 326

W

WANG LABORATORIES 145
WARNACO 420
WARNER COMMUNICATIONS 109
WARNER-LAMBERT 120
WASHINGTON POST 269
WEIRTON STEEL 268
WESTERN DIGITAL 380
WESTINGHOUSE ELECTRIC 27
WESTMORELAND COAL 451
WEST POINT–PEPPERELL 195
WESTVACO 197
WEYERHAEUSER 37
WHEELING-PITTSBURGH 314
WHIRLPOOL 104
WHITMAN 119
WILLAMETTE INDUSTRIES 229
WILSON FOODS 276
WITCO 242
WORTHINGTON INDUSTRIES 354
WRIGLEY (WM. JR.) 357

X

XEROX 22
XIDEX 427

Y

YORK HOLDINGS 290

Z

ZENITH ELECTRONICS 159

MIGRATORY HABITS OF THE 500

The Northeast used to have a hammerlock on headquarters of the largest industrial companies. No more. Here's where they're flying and why. Tomorrow . . . Duluth? ■ *by Alan Farnham*

INDUSTRIAL corporations once seemed as immovable as mountains. Their baggage—factories, forests, slag heaps, dams—weighs in tons. Yet they move. Of a morning, a CEO inhales a lungful of fresh air and says, "Well, Mother, we've been here long enough. Get the vice presidents dressed, and I'll gas up the car." Such corporate migrations are increasing. In a recent poll by this magazine, 73% of FORTUNE 500 chief executives said they had relocated some facilities in the past five years, and 81% expected to relocate facilities in the future. One in seven said he planned to move home base itself.

The map on the opposite page shows the FORTUNE 500's present whereabouts. The darker a state's color, the more headquarters it harbors. Inset numbers show how many headquarters each state has now and how many it had ten years ago. Gains and losses (see table) are the result of many factors besides physical relocation: mergers, acquisitions, industry cycles, regional booms and busts. Alabama's three arrivals, for example, aren't migrants at all, but native companies that grew.

From many causes, one result is clear: The Northeast's hold on corporate headquarters is weakening, with New York suffering the biggest losses. Since 1960 New York's share of the 500 has fallen by more than half. It's as if an unseen hand had hiked the upper-right-hand corner of the corporate billiard table, sending New York's balls rolling south and west to find new homes.

Texas has gained more headquarters than any other state. Says Philip D. Restifo, managing director of Manhattan's Galbreath Co., a relocation adviser: "In Houston you can rent prime office space for $11 a square foot that would cost you $45 in Manhattan. You can buy a great house for $150,000 that would cost $850,000 in New Canaan." He believes Texas-size lobbying has also been persuasive. "The development people are all over New Yorkers to persuade them to move," he says. "If you're interested, the mayor of Houston will be in your office in 24 hours." When J.C. Penney succumbed to such blandishments and relocated its Manhattan headquarters to Plano, Texas, in 1988, it found it could save $60 million to $70 million a year in administrative costs.

BIGGEST WINNERS	
Texas	+12
Virginia	+10
Georgia	+8

BIGGEST LOSERS	
New York	–37
Wisconsin	–6
North Carolina	–5

Headquarters shifts, 1978-88

Starting from a far smaller base than Texas, Virginia has gained nearly as many headquarters. Hugh Keogh, director of the state's department of economic development, believes proximity to Washington, D.C., helps. A corporate sales tax of 6%—unchanged for the past 17 years—hasn't hurt either.

Georgia, too, has done well. George Berry, commissioner of the state's department of industry and trade, claims Atlanta's "hassle factor" is lower than New York City's or Chicago's. Air-conditioning has increased Atlanta's attractiveness "tremendously," he says. Finally there's the clincher: golf in January. According to FORTUNE's relocation poll, CEOs say south Atlantic states, including Georgia, are their first choice for where to relocate company facilities.

Technology makes relocation to remote locations more feasible. With the latest advances in telecommunications, a CEO can run his company from the moon—or Minnesota. Airplanes link him to his most far-flung customers or suppliers. With the exception of good pastrami and certain banking services, he can get in Duluth pretty much everything he used to get in New York City.

At the same time, with the pool of workers growing more slowly than the number of jobs, employers have to compete for new hires. Some do it by touting "quality of life" incentives. This trend, combined with a corporation's need to cut costs, whipsaws cities like New York, where living costs are high and no number of Tintorettos in museums can make up for the smell of armpits in a hot subway car.

To Restifo the solution seems obvious: New York industrials should head for cheaper, more agreeable cities. "What's in an industrial's headquarters besides a lot of overhead and some top executives?" he asks. "The few who need to see bankers or lawyers or rub elbows with other executives at '21' can keep apartments in the city." And the rest? Hello, South Dakota. "No compa-

REPORTER ASSOCIATE *Alicia Hills Moore*

ny is going to pay $50 a foot so a bunch of accountants can go to the Metropolitan Museum on their lunch break," he adds.

Luckily for corporations that would like to maintain a New York presence, one's headquarters can be anything one says it is. Take Borden. The company has 1,200 people in Columbus, Ohio, where offices rent for $20 a square foot. Its headquarters, however, is technically 277 Park Avenue in New York City, where space costs $60. To save money, Borden's headquarters-à-terre consists of 25 people, including secretaries.

A study by William H. Whyte, author of the book *City* and a former FORTUNE editor, finds a striking relationship between CEO residences and corporate relocations. Of 38 industrials that left New York City during a ten-year period, 31 moved closer to their chief's home, dropping the average CEO commute to eight miles.

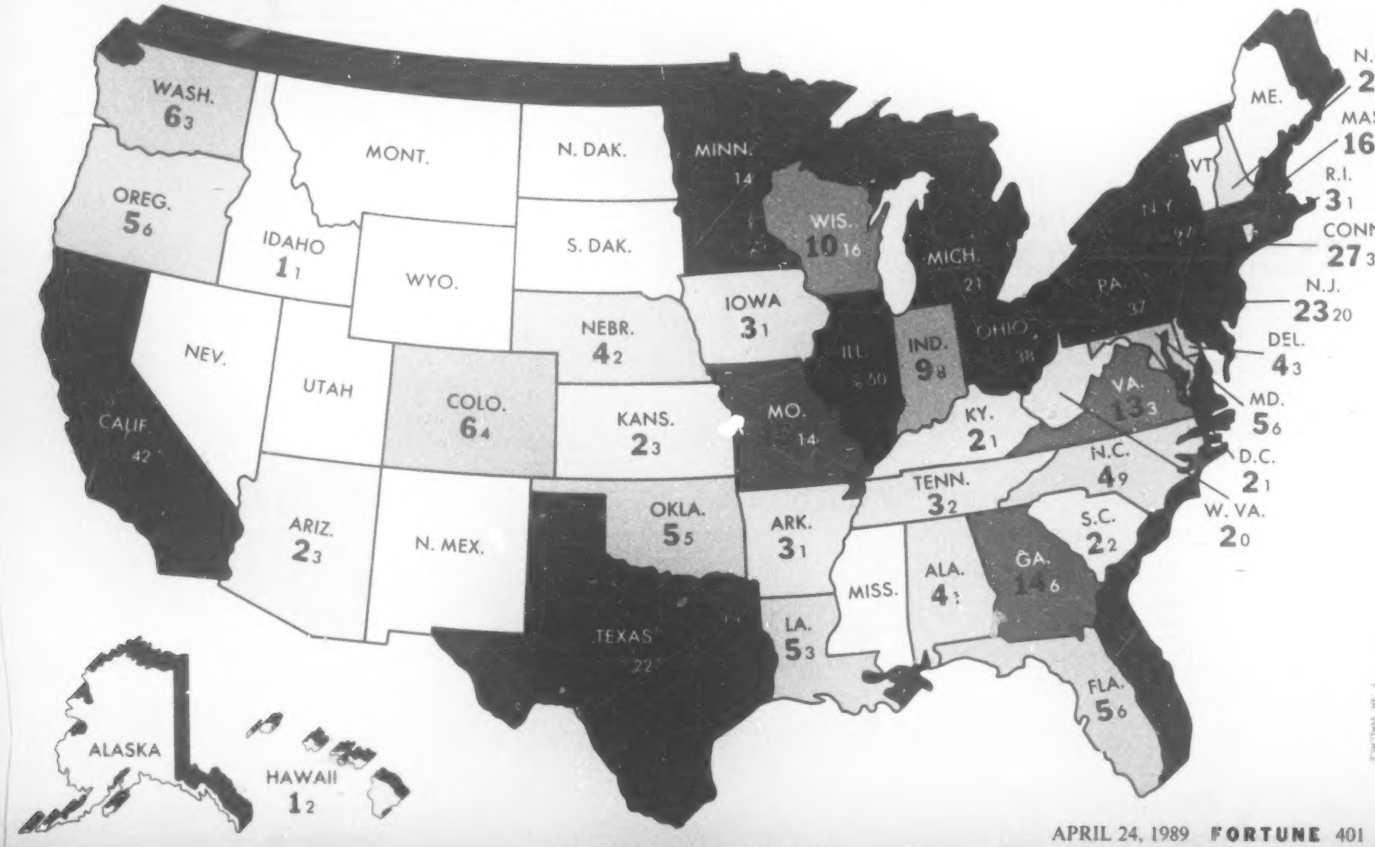
The flight of corporate headquarters may be mostly symbolic. So argues Rolf Wegenke, administrator of Wisconsin's division of business development. When Kimberly-Clark moved its headquarters from Wisconsin to Las Colinas, Texas, in 1985, "we lost 18 jobs," says Wegenke. "The important question isn't 'Where's headquarters?' It's 'Where are the jobs?' " He has a point. Since 1985 Kimberly-Clark has added 500 jobs in Wisconsin.

WHAT OF the future? Ford Harding, a relocation expert with PHH Fantus Corp., a provider of corporate relocation services, predicts that Georgia and Texas will continue to make gains. As they do, will the corporate presence in cities like New York waste away? Don Palmer, a Stanford business school professor, and Roger Friedland, his University of California at Santa Barbara colleague, argue it will not.

As conventional business information becomes easier to obtain, they say, the value of reliable, high-level gossip rises. For security reasons, such gossip must be traded face to face, rather than through notes, electronic mail, or answering machines, which can leave a trail. Where better to exchange business gossip than in the clubs and private meeting places of a great city? Whyte recalls one CEO who lost touch with gossip dens because his company left New York City. If only he had stayed plugged in, he might have heard the rumor that his company was about to be taken over. As it was, the news came as a nasty shock. ■

GEOGRAPHIC DISTRIBUTION OF THE FORTUNE 500

The map below is color-coded to show which states the largest industrial corporations call home. The more headquarters a state has, the darker its color. Red numbers tell each state's catch; smaller figures tell how many each had ten years ago.


WASH. 6 3
OREG. 5 6
CALIF. 42
IDAHO 1 1
NEV.
MONT.
WYO.
UTAH
ARIZ. 2 3
COLO. 6 4
N. MEX.
N. DAK.
S. DAK.
NEBR. 4 2
KANS. 2 3
OKLA. 5 5
TEXAS 22
MINN. 14
IOWA 3 1
MO. 14
ARK. 3 1
LA. 5 3
WIS. 10 16
ILL. 50
MICH. 21
IND. 9 8
OHIO 38
KY. 2 1
TENN. 3 2
MISS.
ALA. 4
GA. 14 6
FLA. 5 6
N.Y.
PA. 37
VA. 13 3
N.C. 4 9
S.C. 2 2
W. VA. 2 0
D.C. 2 1
MD. 5 6
DEL. 4 3
N.J. 23 20
CONN. 27 31
R.I. 3 1
MASS. 16 13
N.H. 2 2
VT.
ME.
ALASKA
HAWAII 1 2

5/4/89 C8900-1

■ INSIDE PHILIP MORRIS • MAKING OVER MIDDLE MANAGERS • THE JAPAN ENIGMA ■

MAY 8, 1989

$3.50

FORTUNE

[illegible]
[illegible] lessons
[illegible] and what
[illegible] next

*105G***********5-DIGIT 20814
*S99ES520S91*5 Y520814 JUN91
SRI CNGRSSN INFO SVC M00M4**
4520 EAST-WEST HWY *015899
P1001S6
BETHESDA MD 20814

10093
0 724434 2

MAY 8, 1989

FORTUNE

ABOVE: A cleanup worker checks gunk trapped by a boom in Prince William Sound.

COVER: John S. Abbott photographed Chairman Lawrence Rawl at Exxon headquarters in New York City.

"We should come down very hard on the industry's laxness. But if we don't produce oil here, we'll produce it somewhere else and ship it to the U.S." PAGE 46

ENERGY/Cover Stories

THE FUTURE OF BIG OIL 46

The Alaskan oil spill is being compared to Bhopal and Chernobyl. Tragic as the loss of wildlife has been, it's not of that magnitude—not yet, at least. The environmental wounds in Prince William Sound will heal. If Valdez ultimately weakens the nation's determination to develop oil, then it will become a major disaster. *by Peter Nulty*

RAWL: IN TEN YEARS YOU'LL SEE 'NOTHING' 50

That's what Exxon's chief executive says will be left of the spill. He hopes a "super job" of cleaning up will overcome Congress's new coolness toward exploration.

EXECUTIVE LIFE

MAKING OVER MIDDLE MANAGERS 58

When a large company tries to reform itself, the toughest and most important task is getting the bosses down the line to catch the vision. Few companies have done it well. Here are some tips on smoothing the process. *by Kenneth Labich*

CORPORATE PERFORMANCE

IS BIGGER BETTER FOR PHILIP MORRIS? 66

The cigarette giant has yet to prove it can manage nontobacco acquisitions. In an interview, CEO Hamish Maxwell concedes some disappointments, but he insists that Kraft was a good buy.

APPLE COMPUTER'S RISKY REVOLUTION 75

An era is ending. John Sculley wants to tone down the sassy California style. He wants more predictable, less dazzling products. Is he tampering too much? *by Brian O'Reilly*

. . . AND NEXT FROM STEVE JOBS 78

COMPANIES TO WATCH 84

Gillette got sharp fighting off two takeovers. Profits rose 17% last year. Plus: Stanhome, Moscom Corp., Silk Greenhouse, Safety-Kleen Corp.

MANAGING

CAN FRED JOSEPH SAVE DREXEL? 89

If the embattled investment bank is to stay on top, its chief executive doesn't have much time. The junk bond market has jitters, the company's market share is slipping, clients are restless, and employees are unhappy. *by Monci Jo Williams*

VOL. 119, NO. 10

"We were going to be up to our butts in alligators right here."

PAGE 50

"We have to learn how to attack the problem and not the person."

PAGE 58

"I quit [smoking] for a month or so, every so often, just to show I can. It's not addictive."

PAGE 66

"Allan scared the hell out of people, and I'm thrilled."

PAGE 75

"We will open foreign markets with a crowbar where necessary, but with a handshake whenever possible."

PAGE 106

"It proved that I had a heart, which surprised a lot of people."

PAGE 156

MONEY & MARKETS

HARD ROAD AHEAD FOR AUTO INSURERS 99

Consumers are angry, costs are spiraling upward. To survive, insurers will have to—guess what?—serve their customers better, and hunt for profitable niches. *by Sylvia Nasar*

POLITICS & POLICY

WHAT TO DO ABOUT TRADE POLICY 106

Here are helpful hints for Ambassador Carla Hills: Don't try to devalue the dollar, do take a new look at dumping laws, and do retaliate—but only when necessary. *by Ann Reilly Dowd*

SELLING

THE ABC'S OF MARKETING TO KIDS 114

They're hard to fool. They want to be cool. And their $248 billion of buying power is not just pocket money. *by Patricia Sellers*

ENTREPRENEURS

HOW TO GET RICH OFF PERESTROIKA 145

A Soviet surgeon has built an eye-care empire based on his pioneering operation for myopia. Presiding over nine clinics, he could be a model of Gorbachev's new manager. *by Pierre Péan*

FORTUNE BOOK EXCERPT

'THE ENIGMA OF JAPANESE POWER' 150

Can't understand Japan? Author Karel van Wolferen says outsiders are confused because they start with the wrong assumptions.

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 8

Fusion in a bottle and what it means, T. Boone Pickens goes shopping in Japan, and more.

FORTUNE FORECAST 15

Will inflation ease as the economy slows down? Don't bet on it. *by Maureen F. Allyn*

PERSONAL INVESTING 33

Bad days for Exxon, good times for the other major oil stocks. *by Andrew Evan Serwer*

Also: Seeking Spain's Wal-Mart. Portfolio Talk with Julian Robertson of Tiger Management.

FORTUNE PEOPLE 156

William E. Simon heals his heart on a 125-foot ketch equipped with a fax. Robert Fomon does LBOs from Palm Beach, and more.

ON THE RISE 157

BOOKS & IDEAS 159

Was socialism a mistake? Of course, argues economist Friedrich Hayek, 89, but intellectuals still won't give up on it. *by David R. Henderson*

OFFICE HOURS 161

When the headhunter calls, make sure you talk to the nice man or woman. *by Walter Kiechel III*

LETTERS TO FORTUNE 164

Harsh words for workaholics, comments from the son of tough boss Harry Figgie.

KEEPING UP *by Daniel Seligman* 165

EDITOR'S DESK

After the interview: Faltermayer, Rawl, and Taylor

OIL FUELS heated passions, particularly when shortages erupt or prices soar or accidents occur and endanger the environment. But it is important to look beneath the short-term passions and beyond the headlines to ask some questions that will have long-term consequences.

What will be the lasting effects of the spill from the *Exxon Valdez*, effects not only on the coastlines and the fauna of Alaska but also on the nation's quest for new supplies to replace ever-dwindling sources of domestic oil? What are the lessons that perhaps every business person can draw from the spill and its sorry aftermath? Those are the subjects we tackle in our cover stories beginning on page 46.

Nulty on North Slope

Writer Peter Nulty traveled the breadth of Alaska, from the port of Valdez to the snow-locked oil fields of Prudhoe Bay on the North Slope. He interviewed government officials, petroleum experts, fishermen, environmentalists, among others. Nulty, who in 13 years at FORTUNE has tracked oil stories to Vienna, Algiers, and almost every producing U.S. state, qualifies not only as an authority on the subject but also as an environmentalist. He is a member of the Nature Conservancy and a spare-time bird watcher. He was moved almost to tears by the helpless animals and the superhuman effort of volunteers as they painstakingly washed, dried, and fed medicines to oil-slogged sea otters and birds.

Yet he came back with a surprising report: "The Valdez spill was a very sad accident, and it will hurt a lot of people. But it hasn't taken a single human life. I don't see a great disaster in the making."

Most of the Alaskans whom Nulty interviewed considered the spill manageable, and—unlike many people in the lower 48—they did not view it as a reason to halt drilling in Alaska.

The larger problem for oilmen may involve politics and public relations. Exxon's seemingly slow response to the accident, and the Alyeska oil consortium's failure to meet past pledges that it could handle almost any contingency, inflamed emotions, notably in Congress.

In a remarkable interview with FORTUNE, Exxon CEO Lawrence Rawl candidly owned up to the mistakes he and his managers made. Senior editor Edmund Faltermayer, writer Alex Taylor III, and I questioned him for what was supposed to be 40 minutes; he kept talking for more than twice that long. Yes, he wanted to explain Exxon's side of the story: why he did not immediately act in the very visible way that Johnson & Johnson CEO James Burke had done when the Tylenol troubles broke or that former Union Carbide CEO Warren Anderson had done when the Bhopal tragedy struck; why he feels bureaucratic delays cost an opportunity for a quick cleanup; and what Exxon will do now. He also had some messages for other managers. Key among them: Be prepared well in advance with a plan to speak up if disaster strikes. I think you'll find many more fascinating insights in our interview with the man who runs the world's biggest private oil company.

This magazine is produced by a remarkably varied group of men and women: a lawyer from Nebraska, an MBA from South Dakota, an English scholar from Alabama, to name a few. None of them has contributed more to FORTUNE than Mary Johnston, a lady with a heart the size of Texas (she came from Austin) and a talent to match. Mary worked for Time Inc. for almost 40 years, 32 of them as FORTUNE's chief of reporters, until her retirement little more than a year ago. I regret to tell you that Mary Johnston died in March at 69 of emphysema.

Mary Johnston: a heart the size of Texas

Mary was not only the primary guardian of our accuracy, but also mentor, confidante, and friend to countless members of our staff. She was an unerring judge of character who plucked her own staff from disparate fields and molded them into journalists. She instilled in them a devotion to truth and fairness and accuracy that is a hallmark of FORTUNE's reporting and a major pillar of its reputation. Most of the reporters and writers at FORTUNE today, and many on the board of editors, were hired by Mary, so her imprimatur will endure in the years to come. We will grieve for the loss of her warmth, elegance, humor, and wisdom.

Marshall Loeb
MANAGING EDITOR

Procter & Gamble after the press and TV reported that the otters and ducks were being scrubbed with P&G's best-selling dishwashing detergent. But the company swears it won't take advantage of the *Valdez* disaster. Says John Bess, general manager for dishwashing products: "We don't want to exploit the situation." Neither will **Teledyne**. Rescuers are spraying ducks with Water Piks, its oral irrigators, to remove oil glued to their feathers.

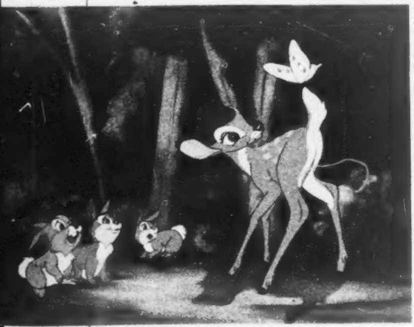
The incident has brought out the best in corporate citizenship. After **Clorox** learned that its Formula 409 was being used to scrub oil off boats, the company offered to contribute cases of the cleanser. When officials at the makeshift rescue center said they needed films to train volunteers to wash the animals, P&G immediately dispatched experts and a camera crew to the scene. Cost: $50,000.

– Frederick H. Katayama

Pickens's foray into Japan shook the status quo on takeovers.

COLLECTING THE FUNNIES

■ What's up, Doc? Answer: cels, the celluloid building blocks of animated films. In the past year the value of the transparent rectangles on which animated characters are painted has soared. Last November a cel from a vintage **Walt Disney** Mickey Mouse film, *The Orphans' Benefit*, fetched $148,500 at a Christie's auction. In June the action turns to Sotheby's. One cel from Disney's Oscar-winning film, *Who Framed Roger Rabbit*, could bring in as much as $20,000.



Collectors will bid for Bambi.

Investors are invading the clubby turf of cel collectors and bidding up prices. Experts say values can only go higher because the shift to computer animation will make the hand-drawn cels an art of the past. The price of a cel depends on several factors: its condition and vintage, the scenery, the character's facial expression and cuteness. Disney works can attract six-figure bids, while characters from its rival **Warner Brothers** (Bugs Bunny and Yosemite Sam) command $6,000 at best. Why the disparity? *Snow White, Pinocchio*, and many other Disney films are full-length theatrical productions, which adds to their prestige, while Warner and **Hanna-Barbera** are better known for their shorts. Besides, Disney owns the undisputed superstar. Says Joshua Arfer, director of animation art at Christie's: "Bugs Bunny isn't as universally cherished as Mickey." Call it mouse appeal.

– F.H.K.

BOONE GOES HUNTING IN JAPAN

■ Is T. Boone Pickens trying to greenmail the richest company in the world? Notably inactive in the U.S. lately, the corporate raider chose an unlikely overseas target when he secretly bought 20% of an automobile parts manufacturer affiliated with **Toyota Motor Co.** The No. 1 Japanese automaker owns 19% of **Koito Manufacturing** and isn't likely to hand over those shares to Pickens or fork over part of its $13.5 billion cash hoard to buy Pickens's holdings at a higher price. In Japan, where companies are barred from buying their own stock, the standard greenmail scenario requires an ally to do the purchasing.

Pickens has said he is interested in Koito solely as an investment in a growing company, but some Japanese bankers are interpreting the Texas-based **Boone Co.**'s move as a battle cry. While Japanese companies have been snapping up U.S. enterprises, almost no action takes place in the opposite direction. One reason: Big chunks of Japanese corporations are held by friendly firms with no intention of trading.

Some Japanese see a fiendish American plot. "The Americans want to make this a political issue," says an M&A executive at one of Japan's leading securities firms. Officials at Boone Co. aren't unmindful of the policy implications. Says Sidney Tassin, the VP of finance: "I think the transaction will sharpen the focus on the lack of reciprocity in Japan."

"Acquisition" is still a dirty word in Japan, where compa-

MBAs FADE A BIT

■ So you heard the glory days were over for MBAs? Well, shed no tears. A survey by New York University's Leonard N. Stern school of business shows that last year's graduates of the nation's top business schools are taking home record salaries again—although increases are more modest than before the stock market crash. Grads in the class of '88 got offers 4.1% higher than the year before.

– J.L.

1988 AVERAGE MBA STARTING SALARIES

STANFORD	$53,515
MIT	$53,244
HARVARD	$52,987*
DARTMOUTH	$51,000
PENN	$50,995
COLUMBIA	$49,478
NYU	$49,520
VIRGINIA	$48,334**
CHICAGO	$47,448
NORTHWESTERN	$47,383

*Estimate. **Includes bonuses.

THE ABC'S OF MARKETING TO KIDS

They know a lot about shampoo and tyrannosaurus claws. They want to be cool. And their $248 billion of buying power is not just pocket money.

■ *by Patricia Sellers*

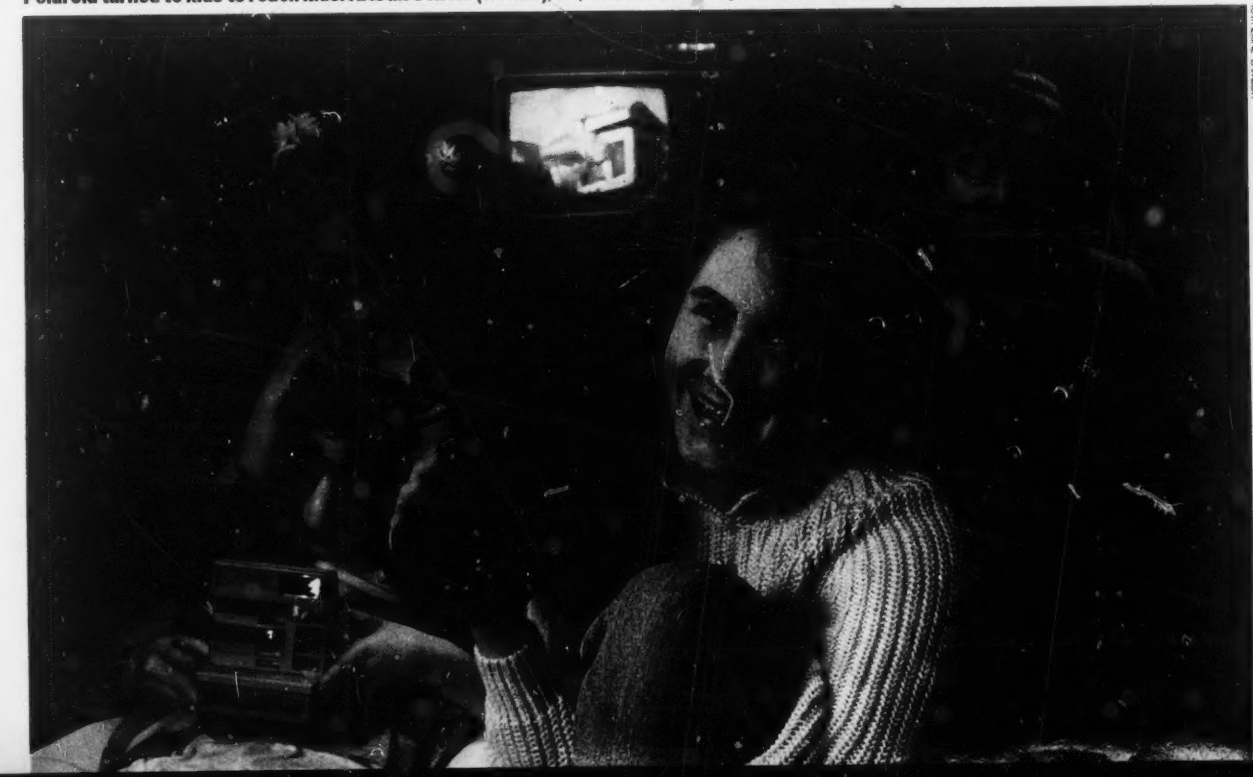
YOU DON'T NEED that," says Kathy Buonincontri to her daughter, Monica, as they stand in the makeup section of the Shop Rite supermarket in Clark, New Jersey. "You just bought all that stuff at the mall. You don't need any more lipstick." Pretty, blond, and dressed to kill in miniskirt, denim jacket, and Reebok sneakers, 12-year-old Monica insists that the one item she *must* have is a bottle of Maybelline primer to coat her fingernails before she paints them with light pearly-pink polish. "Are you going to buy that?" asks the mother. "No, you are," Monica proclaims. Mom gives in, of course, then asks, "Well, can I borrow it?"

Like many mothers today, Buonincontri, 40, will buy her daughter and 8-year-old son just about whatever they want. "Anything in moderation," she says. That gets expensive because the kids, tuned in to the media and aware of the latest trends, demand a lot. Monica uses her own shampoo, Revlon's Clean & Clear, because, she says, ads in *Teen* magazine show how it gives hair bounce and body. "It made my friend's hair bouncy too," she says. And she insists that the Buonincontris eat Stouffer's French Bread Pizza, not the Shop Rite brand that Mom suggests buying. Says Monica: "Any store-brand thing is gross."

The most sophisticated U.S. marketers are acknowledging the clout of kids like Monica—28 million incredibly conspicuous consumers age 12 to 19. According to Lester Rand, a New York consultant who has been observing the trends in teenage wealth for nearly four decades, the typical adolescent spent $2,331 last year, more than twice as much as ten years earlier (see chart). As a result, even though the teenage population has been declining for more than ten years, total spending of this group has risen from around $32.2 billion in 1978 to some $55 billion last year, an amount that approximates the gross national product of Turkey.

The total impact of teenagers on the U.S. economy is much larger, however: $248.7 billion by Rand's reckoning. In addition to

Polaroid turned to kids to reach kids. Kristin Schorr (center), 14, won the company's TV commercial-making contest for the Cool Cam.



KATHERINE LAMBERT

the $55 billion that came from kids' allowances and after-tax earnings and $11.2 billion that they saved for future purchases, there's another $33.5 billion that busy moms and dads gave their offspring for family grocery shopping last year. Rand calculates that the youngsters also "influenced" almost $150 billion in family purchases of such products as stereos, breakfast cereals, and, as in the Buonincontri household, frozen pizza. This amount is likely to increase rapidly when the teen population starts growing again in 1992.

The spending power of even younger consumers is radical too—to borrow a bit of kidspeak. For you dweebs, "radical" means great or wonderful. The number of children under 12, currently 42 million, will keep growing through at least 1995, and money burns holes in their pockets. James McNeal, a marketing professor at Texas A&M University, estimates that 4- to 12-year-olds used $6.2 billion of their own money last year, up from $4.2 billion in 1984, to buy items such as snacks, candy, and toys.

Says Selina Guber, president of Children's Market Research in New York: "Parents are busier and feeling guiltier. So they are softer when it comes to children's requests." The kids are no dummies at exploiting these emotions. One 11-year-old girl told Guber, "I don't ask my parents for something when they're together because if one says no, they'll both say no. I ask my dad first. If he says yes, then he helps me convince my mother."

FOOD COMPANIES are particularly intrigued by the youth market. It turns out that junior is juggling supermarket shopping with schoolwork because some 70% of mothers of children age 17 and under work outside the home. Rand found that 80% of teenagers he interviewed last year said they were "heavily involved" in family food shopping, compared with 63% in 1978. But marketers' interest in kids extends beyond supermarket aisles. Polaroid's new camera, the Cool Cam, is designed for "tweens," boys and girls between 9 and 14, and Delta Air Lines recently created a Delta Fantastic Flyers Program for customers 2 through 12. AT&T is trying to figure out how much kids know about long-distance services, to see if it should reach out and touch them directly in ads and promotions.

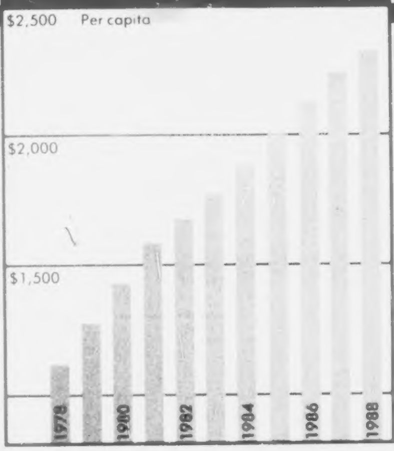
Says Herbert M. Baum, the president of Campbell USA: "There hasn't been enough done in the kids' market. Now it's a niche that everyone is attacking." Even the financial services industry is looking for its share of pocket. Neale Godfrey, former president of New York's First Women's Bank, is setting up Children's Financial Network to help banks design and market checking accounts and CDs for financiers up to age 21. "Children are intrigued by money," she says. They are also becoming smarter money managers. Texas A&M's McNeal found that kids age 4 to 12 saved about $2.6 billion in 1988—30% of their earnings and allowance money—while in 1984 the same age group saved $500 million, only 11% of their income.

THE KIDS' MARKET is attractive because the money is there, and because corralling a young consumer and keeping him loyal sets a course for predictable sales growth. Says Philip Fletcher, president and chief operating officer of ConAgra Prepared Food Cos., which is testing Banquet Kid Cuisine microwaveable meals: "The appeal isn't simply satisfying kids' needs now but also developing them as users of our products so that they'll buy as adults." A recent study of 40,000 college students by New York–based Decisions Center Inc. and MarketSource of Cranbury, New Jersey, revealed that 62%—and 56% of seniors—buy the same brand of toothpaste they used during high school.

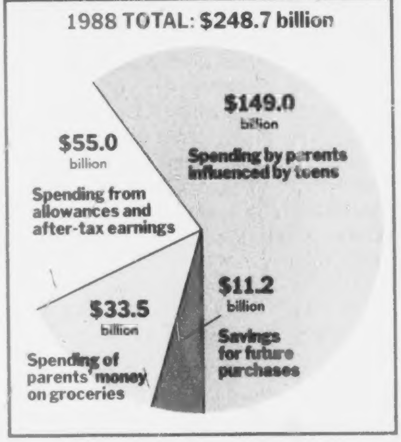
Moreover, some of the traditional reserve that once kept many marketers from targeting kids is loosening, however noisily. Whittle Communications (which is 50%-owned by the Time Inc. Magazine Co., the publisher of FORTUNE) hopes to roll out its new *Channel One*, a 12-minute daily news program for teens, into 8,000 schools beginning next fall. The TV shows include commercials for products such as Head & Shoulders shampoo and Gillette razors.

Christopher Whittle, the CEO of Whittle Communications, points out that kids are already exposed to 100 minutes of ads a day and he is adding only two minutes more. But the American Federation of Teachers argues that Whittle provides a captive, impressionable audience for advertisers, and Action for Children's Television has called for "Whittle-free zones" in which schools would refuse to broadcast *Channel One*. Child psychologist Dr. Lee Salk opposes *Channel One* but notes that there is increasing tolerance for marketing to children. "Kids are entitled to an educa-

ANNUAL TEEN SPENDING



TEEN IMPACT ON THE U.S. ECONOMY



KID POWER OVER FAMILY PURCHASES

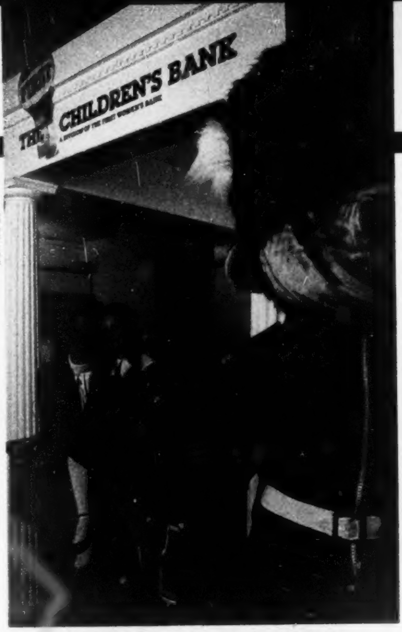
Ages 6–17	Parents saying they were influenced by child	Children reporting influence over parent
Breakfast cereal	78%	60%
Clothing	72%	83%
Toys	68%	48%
Ice cream	58%	54%
Soft drinks	56%	58%
Video movies	48%	53%
Toothpaste	44%	26%
Personal computers	10%	9%
Automobile	8%	18%

REPORTER ASSOCIATE *Joan Viebranz*

tion without having to be the object of commercial promotion," he says. "But this is a free-enterprise system, and selling to kids comes with the territory."

Seven-Up, whose sales had gone flat among youngsters, early last year broke the soft drink industry's tradition of not advertising directly to children on Saturday-morning and after-school TV. In its commercial the little red dot on the soda can comes alive as a furry, mischievous creature wreaking havoc on grownups. Seven-Up has received only one complaint. Meanwhile, kids guzzled 20% more of the soda last year than in 1987.

Marketing to children can be treacherous, however. They are tough customers for adults to understand. Last year, for example, in a survey of 1,200 youths age 6 to 17, interviewers asked, "Do you wish your family were bigger?" Some kids replied: No, my family is plenty tall. The researchers reworded the question. Ann Clurman, senior vice president at Yankelovich Clancy Shulman, says that she frequently asks her clients, which include many large consumer-products companies, to guess what kids say they worry about a lot. She tells them to rank three choices—death of a parent, nuclear war, a bad report card—"and close to 90% get it wrong," she says. The marketers rank nuclear war first. Kids say a bad report card is a lot scarier.



LISA BOGDAN

Neale Godfrey opened a bank at F.A.O. Schwarz for kids like her daughter Kyle, 6.

American Home Products learned in an embarrassing fashion last year that children are smarter than it realized. About 20 tykes complained after the company introduced Chef Boyardee's Dinosaurs Pasta with a label that identified a reptile with three claws on each arm as a tyrannosaurus. Alas, the beast was an allosaurus—a tyrannosaurus's arm has only two claws. American Home amputated the extra digit and sent apology letters and coupons to the young objectors.

Like adults, kids don't respond to marketers who talk down to them. Marvin Schoenwald, president of Manhattan-based M/E Marketing & Research, tells clients to populate their commercials with children who are about two years older than the ones they are trying to reach. "Anything babyish is the kiss of death," he says. The sure-fire way to capture young customers is to create a "cool" image for your product. Says Carol Hill, an account supervisor at Leo Burnett, the Chicago-based ad agency: "Kids run their lives by wanting to be cool. Cool means being confident, respected, and always knowing the right thing to say."

TO ENDOW their products with the requisite coolness, marketers are beginning to employ some precocious consultants. Take Polaroid, for example. The company's first product for children, the $69 Cool Cam instant camera, was introduced in February 1988 and had sales last year of about $15 million, some 30% higher than Polaroid expected. The reason for the camera's success? Says Kathy D. McCoy, the marketing manager: "We let the kids design their own camera." Polaroid tried out different colors and names on more than 600 young shutterbugs, and the kids selected the camera's two color schemes—pink-and-grey and red-and-black. The youngsters told Polaroid to package sunglasses with the camera for an even cooler look.

The kids also had their say in the advertising. Polaroid held a commercial-making contest for children in ten cities last year and televised the winning spots in each local market. Kids' recall of the homemade commercials—how well they understand and remember the message that the company wants to deliver—far exceeded most adults' recall of TV ads. Says McCoy: "Kids understand kids. They were drawing the right inferences because a kid was communicating." The grand-prize winner, the creation of 14-year-old Kristin Schorr of Manassas, Virginia, will air nationwide on cable TV beginning later this year. Called "Fish," it is a distorted view from inside a fishbowl of two geeky-looking kids. One fish gurgles disdainfully to another, "The only thing cool about these nerds is that they have a Cool Cam."

MY OWN MEALS

STEVE LEONARD

Mary Anne Jackson dishes up My Own Meals to her own children, Katie, 4, and Joey, 2.

Carol Hill of Leo Burnett helped H.J. Heinz make its ketchup ads cool after Heinz discovered that children 17 and younger eat one-third more ketchup than adults do and that kids often choose the family brand. In one current commercial, a dark-haired, self-confident high-schooler impresses a pretty girl when he sets a Heinz ketchup bottle on

HEINZ
TOMATO KETCHUP
57 VARIETIES

Heinz's red-hot stock car makes ketchup look cool to youngsters in Jonesville, Georgia.

its side on the edge of a rooftop, then bounds down several flights of stairs, buys a hot dog from a street vendor, and holds out his frank to catch the first descending drop of sauce. To make ketchup even cooler, the company is sponsoring a fiery red-and-white Heinz Ketchup Pontiac that competes this year in 30 Winston Cup stock-car races.

The pitch is paying off. Says Jeffrey Conner, Heinz's product manager for grocery ketchup: "Our research shows that kids like the commercials because they aspire to be teenagers, and adults like them because they bring back memories of their youth." Now more hot dogs are doused with ketchup—37% of all wieners eaten last summer, vs. only 30% two summers before—and more burgers are being smeared with it too. As a result, Heinz's $250 million U.S. ketchup business grew about 2% in volume in 1988 after five flat years.

Hot soup can be cool too. Campbell interviewed groups of elementary school children and found that the youngsters like soup but were embarrassed to admit that they eat it. Why? Turns out kids think only Pee-wee Herman types slurp soup. Youngsters regard the bizarre, campy TV star who wears rouge and red lipstick as funny but nerdy. Boys and girls both admire athletes, however, so the company presented the Campbell Kids—the tubby tykes who have symbolized the soups since 1904—as slimmed-down, shapely sports figures on the labels of the cans. A gymnast is on Curly Noodle soup, a weight lifter on Meatball Alphabet. With the help of ads directed at kids instead of moms, Campbell last year bench-pressed its estimated $300 million children's soup line 6% after four years of no growth.

Kids don't want to admit they eat soup. Why? Only nerdy Pee-wee Herman types slurp the stuff.

In their discovery of kid power, marketers have to be wary of overlooking Mom altogether. She may work in an office, but she still reigns in most households. Procter & Gamble learned this lesson trying to build sales of Crest for Kids, a sparkle-filled, bubble gum–flavored version of Crest gel that was introduced in late 1987. The kids-only toothpaste market has grown more slowly than expected because research shows that Mom is not keen on buying a second tube of toothpaste just for junior if it doesn't clean his teeth better than the adult stuff does. Colgate-Palmolive is using these findings to introduce its own kids' toothpaste, Colgate Junior. Formulated to appeal to parents, Colgate Junior is less abrasive and foamy than adult Colgate, and the tube's star-shaped opening discourages kids from squeezing out gigantic globs.

Mary Anne Jackson aims her microwaveable entrees for kids, My Own Meals, directly at mother. The former strategic planner at Beatrice Co. couldn't find nutritious, additive-free dinners for her daughter, Katie, 4, so she created her own after sending surveys to 2,000 mothers via her diaper service. The surveys showed that other moms also wanted easy-to-prepare foods without artificial ingredients or preservatives for their kids, and Jackson, 35, complied, with offerings such as My Favorite Pasta, a mixture of lentils, barley, and ground pork. Her TV commercial works on Mom's guilt about not being there to cook her kids' meals: "As a busy mother like you, I worry about my children eating right," she tells viewers. Having beat such competitors as ConAgra and Hormel to the market, My Own Meals expects sales of $2.6 million this year.

AN EVEN MORE alluring and difficult opportunity awaits American companies when they try to reach kids abroad. Children age 5 to 14 comprise 13.6% of the European population, and they are spending a growing percentage of Mom's and Dad's disposable incomes. European countries restrict marketers' ability to interview children, however, and only about 15% of the kids age 6 to 17 have their own TVs, vs. 40% in the U.S. Texas A&M's McNeal says European parents shudder at the thought of their kids as wanton consumers. "They have a Fifties attitude about children. U.S. parents give kids freedom to spend their own money two to three years earlier."

But teens are a different story, thanks to the universal language of music videos. Says Tom Freston, president of MTV Networks, the cable programmer for young people: "Youth culture in just about every nation revolves around music, fashion, and humor. Kids are not the same all over the world, but they resemble each other closely, more than any other generation in history." MTV broadcasts its English-language programming in 25 countries, permitting marketers like Pepsi-Cola and Coca-Cola to show the same high-decibel ads to viewers everywhere.

Throughout the world, children are changing fast from kids to consumers. Savvy marketers are both capitalizing on the trend and speeding it along. F

■ JAPAN'S GLOBAL PUSH ● HOW SAFE ARE THE AIRLINES? ● RALPH NADER RETURNS ■

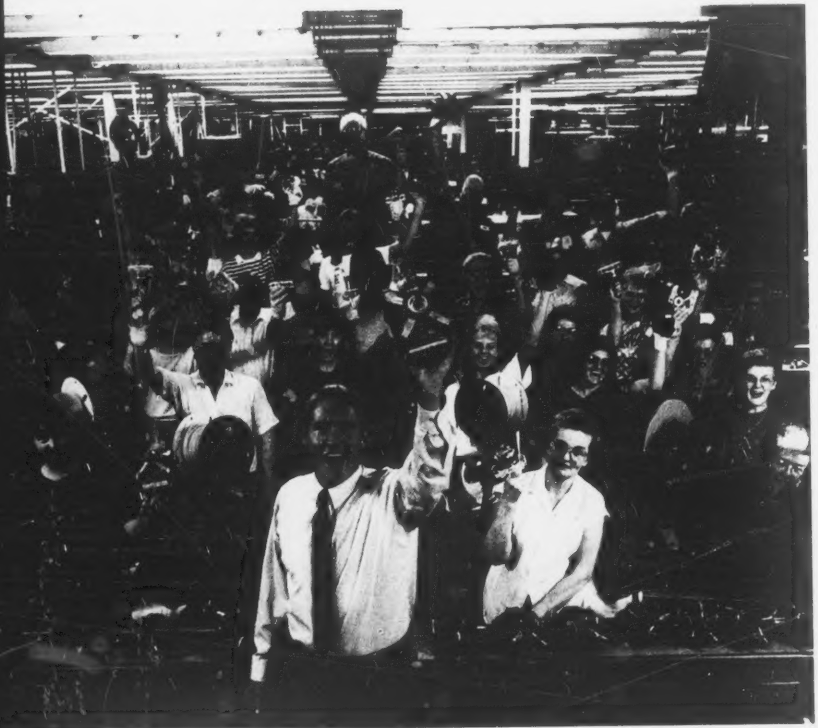
FORTUNE

"KILLER" COMPETITORS

•1056•••••••••••5 DIGIT 20814
0 724434

MAY 22, 1989

FORTUNE



"We are very confrontational. The minute you back off, a little of the intensity drops."

COVER STORY/PAGE 36

ABOVE: Gerd Ludwig photographed Emerson Electric CEO Charles F. "Chuck" Knight with workers at a motor plant in Paragould, Arkansas.

COVER: Knight photographed by Ludwig at Emerson headquarters in St. Louis.

MANAGING/Cover Story

COMPANIES THAT COMPETE BEST 36

These outfits aren't just winners. They're aggressive machines, laying waste to the competition every day, amassing impressive market share, then amassing more. Some bear familiar names: Eastman Kodak, Perrier, Emerson Electric. Others you may have heard of only if you've had the bad fortune to try to sell against them: Unifi, Jostens, AMP. Here's how they keep rolling relentlessly on. *by Bill Saporito*

SHADES OF GENEEN AT EMERSON ELECTRIC 39

COMPETITION

JAPAN'S GROWING GLOBAL REACH 48

The nation's huge investments around the world are becoming almost commonplace—a major company here, a giant factory there. But now the Japanese are going further: donating to charities, striving to be good corporate citizens, sending more aid to the Third World than any other country (the U.S. is No. 2). Will political power follow all that cash? *by Carla Rapoport*

POLITICS & POLICY

WHO IS NICK BRADY? WHY IT MATTERS 59

The patrician Treasury Secretary could greatly affect business, investors, and taxpayers. Results so far: two dramatic initiatives—but some jaw-dropping gaffes as well. *by Louis S. Richman*

BRADY, BUYOUTS, AND PUROLATOR 66

TECHNOLOGY

HOW SAFE ARE YOU IN THE AIR? 75

Terrorists and an aging fleet of aircraft threaten the industry's impressive safety record. Maintaining safety in the air and security on the ground will get costly. *by Anthony Ramirez*

THE ECONOMY

HOW TO REGAIN THE PRODUCTIVE EDGE 92

Beyond the star performers, many U.S. companies and industries still do not produce well enough. A new MIT report, exclusively excerpted here, tells why—and what America must do.

VOL. 119, NO. 11

"There is no such thing as maintaining market share. Grow it, or it will decline."

PAGE 36

"We have to invest in culture, not just technology, and we have to do it all over the world."

PAGE 48

"We spent $65 million, down the hole. And we've resurrected *Ralph Nader*. It's like Lazarus."

PAGE 106

"My view, looking at the numbers, is that a recession has probably begun."

PAGE 133

"When I shop now, I call it research."

PAGE 153

"Foreign nationals must have as much of a shot at the top as domestic talent."

PAGE 157

LOBBIES

THE RESURRECTION OF RALPH NADER 106

After years in the shadows, America's most famous consumer activist shines again. Why the comeback? It's not that he's changed. It's that society has. *by Thomas A. Stewart*

TRADE

NORTH AMERICA'S NEW TRADE PUNCH 123

The U.S.-Canada deal is more exciting than most Americans think. Beyond opening up a huge continental market, it will make companies in both countries more powerful competitors in Europe and Asia. *by Louis Kraar*

MONEY & MARKETS

JUNK BONDS FACE THE BIG UNKNOWN 129

The high-yield debt market coped well with its recent jitters. But with fear of recession mounting, think seriously about weeding your junk portfolio. *by John Paul Newport Jr.*

'THIS IS A DIRTY BUSINESS' 133

William Seidman, head of the FDIC, closes ailing banks for a living. Here he gives the inside story of his new—and much messier—job: cleaning up all those troubled savings and loans.

CORPORATE PERFORMANCE

COMPANIES TO WATCH 141

Profits are back at Honeywell, and restructuring is almost over. Now if only the raider rumors would go away. Also: Marion Labs, Premiere Radio Networks, Landmark Graphics, and Cimco.

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 10

Why Jesse Jackson likes Mike Milken, legal help for investors, Rouse's waterfront blues, and more.

FORTUNE FORECAST 17

With inflation and interest rates rising and the economy slowing, executive exuberance is fading a bit. *by Vivian Brownstein*

Also: Exploding the myth of emaciated business investment. *by Todd May Jr.*

PERSONAL INVESTING 25

FORTUNE's quarterly strategy report: This stock rally isn't worth chasing. *by John J. Curran*

Also: Portfolio Talk with money manager Florence Fearrington.

FORTUNE PEOPLE 153

Olivia Newton-John's newest hit, friendlier skies for Richard Ferris, springtime for Herb Schmertz, and more. *by Mark Alpert*

ON THE RISE 154

OTHER VOICES 157

Headhunter Lester B. Korn tells how to develop the next generation of CEOs.

LETTERS TO FORTUNE 163

Consultants who don't do as they say, the pros and cons of "infrastretching," a sailor's lament, and more.

KEEPING UP *by Daniel Seligman* 167

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, John J. Curran, Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Alan Farnham, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Cremes Haight, Gary Hector (San Jose, CA), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Bill Saporito, Lenore Schiff, Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John Huey, John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo), Richard S. Teitelbaum
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Todd James, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Karen Andrews, Charles J. Attardi, Leslie Brenner, Jonathan Brown, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

Cynthia Hutton and Bill Saporito stop to smell the flowers.

THEY ARE NOT ALL household names, and some of them aren't even very big. But they are all giants in their field. These are the companies that through foresight, fortitude, and occasionally a bit of luck have seized huge market shares and defended their positions so well that they are virtually impregnable. How do they do it? Associate editor Bill Saporito's cover story on supercompetitors sets out the rules every manager should know to play the market share game.

For companies that win, the prize is control over their own destiny and protection from global competition. You can't become a market leader just by cutting prices. As Saporito notes, "You have to meet the specifications of your customers, and specs are getting tighter all the time." Quality, adaptability, and knowing what your customer will need tomorrow are key requirements.

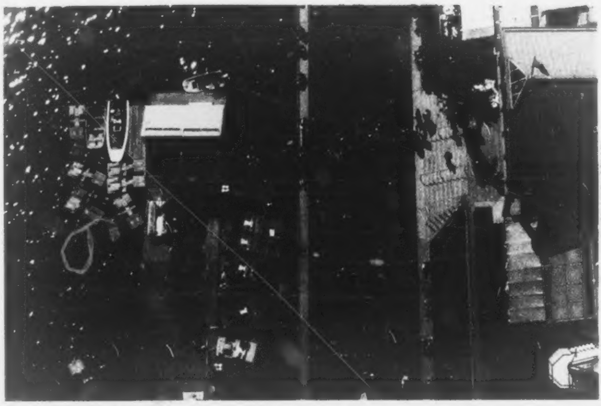
Saporito uses his legs and eyes to find out whether companies can deliver what they promise. "If you've been in enough factories," he says, "you can tell who's efficient just by watching what people are doing." For this story he inspected plants from Racine, Wisconsin, to Harrisburg, Pennsylvania, to Minneapolis.

Reporter Cynthia Hutton polled dozens of Wall Street analysts to compile a list of market share champs of assorted sizes. She and Saporito were most impressed by the variety of paths these enterprises have followed to domination. "Some innovated and got in early," says Saporito. "But nothing recedes like success if you're simply going to say how wonderful you are. A number of supercompetitors—AMP, Emerson, and Kodak among them—had to undergo fundamental changes to maintain their position." For how they did it, see page 36.

Also in this issue is Tokyo bureau chief Carla Rapoport's report on the growing global reach of a whole nation of supercompetitors. Though Japan has long protested that it has no ambitions for international political or financial leadership, Rapoport found that it is increasingly moving toward just that. This is just the latest of many ground-breaking stories by Rapoport. She uncovered Japan's plans to become a force in global oil production, reported on its large and growing defense industry, and regaled us with tales of great Japanese mistakes. International editor Don Holt describes Rapoport as a reporter who "gets her sources to say the darnedest things." That skill shows in her candid portrait of a huge economic power still groping to find its place in the world.

Tokyo chief Carla Rapoport

Marshall Loeb
MANAGING EDITOR



Baltimore's Harborplace: where the waterfront makes money

INVESTORS LOOK FOR LEGAL AID

■ When a prospectus for a limited partnership offering units in a Washington State orchard crossed broker James Wheeler's desk in 1984, the deal looked so appetizing that he bought $10,000 worth for his own account. Says Wheeler: "The only distribution we received was a little box of apples in 1986." Today Indian Wells Orchards, which got $13 million in investors' money, is in Chapter 11. Wheeler, then with **Shearson**, which underwrote the deal, will be lucky if he gets anything else back from his investment. The same holds true for clients who followed his lead.

Wheeler and a souvenir

It is no secret that many investors have been battered by limited partnerships that failed to perform. But the sheer volume of failures is only now beginning to show, as more and more of these "investments" turn sour. By now even the most patient investors realize the extent of their losses. Nobody is sure just how many are involved. But Steven Bleier, president of Diversified Financial Management of White Plains, New York, a company that analyzes these investments, estimates that up to 10% of all partnerships offered between 1980 and 1985 are insolvent.

The brokers and syndicators who promoted them are beginning to feel investor wrath via their attorneys. Indian Wells limited partners have brought a class action suit against Shearson, claiming that the brokerage misrepresented the orchard's potential. Shearson also is involved in litigation related to at least one other partnership. Among syndicators, **Southmark** of Dallas and **Jacques-Miller** of Nashville are loaded down with troubled partnerships that could spell legal problems.

– Andrew Evan Serwer

WATERFRONT BLUES

■ The water's edges at Baltimore's Harborplace and Boston's Faneuil Hall are highly successful marketplaces, a colorful mix of stores, bars, and restaurants that bring in waves of tourists and retail dollars seven days a week. But in most other places, this kind of waterfront development is yet to prove a success—as **Rouse Co.**, the firm founded 50 years ago by real estate innovator James Rouse, has found out. Although the company developed the profitable Baltimore and Boston locales, its South Street Seaport in New York City has not made money since it opened five years ago. Other recent Rouse Co. projects, Miami's Bayside and New Orleans's Riverwalk, lose money.

Thus warned, nephew Willard's independent **Rouse & Associates** has decided to get out of a $40 million plan to turn Penn's Landing in Philadelphia into a marketplace. Similarly, the elder Rouse's new firm, **Enterprise Development**, which has sunk over $30 million into riverfront projects in Flint, Michigan, and Toledo, has upped anchor from those ventures, leaving its partners—the cities—to do with them as they see fit.

What's the lesson for developers? Being on the water is not enough. Unless the area is easily accessible and likely to be visited by sufficient hordes of spenders, the project will fail.

– Reed Abelson

HOW DIRECTORS CAN HELP SHAREHOLDERS

■ Are shareholders represented as well as they could be by a company's directors? No, say a hefty one-third of the 102 outside directors of FORTUNE 500 industrial and service companies interviewed by **Egon Zehnder International**, an executive search firm.

Other responses in the survey suggest that there may be more unrest in boardrooms than management, including inside directors, would like (see table). Says Gregory Carrott, a consultant with the firm: "What seems to be emerging is a new breed of outside director who is more independent and less likely to follow management's lead."

Those words are now echoing at **Oak Industries**, which manufactures electronic equipment. **Roderick M. Hills**, former chairman of the Securities and Exchange Commission and an outside director of Oak, has launched a proxy battle to unseat five of the eight directors, including the chairman, Ed McNeely.

Hills, who has no stock in the company, has one main gripe: Management lacks the

WHAT DIRECTORS SAY IS WRONG WITH CORPORATE BOARDS

Too few directors have international business experience.	64%
Institutional investors have too much power, and something should be done to control it.	50%
Inside directors cannot be expected to have the best interests of shareholders in mind in takeover situations.	40%
Inside directors make a company responsible to itself, not to shareholders.	35%
"Don't rock the boat" is the unspoken credo of most board members, inside and out alike.	28%

SOURCE: EGON [illegible] TIONAL

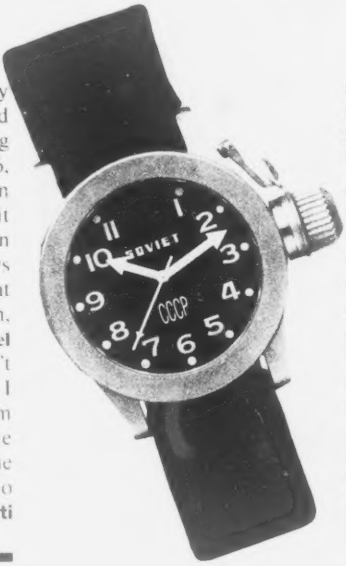
industrial experience necessary to run the company. Oak piled up $321 million in operating losses between 1982 and 1986, at which point it slowly began to pull into the black. In 1988 it made $13 million pretax on sales of $198 million. Says Hills, a managing partner at **Donovan Leisure**, a law firm, and a new director of **Drexel Burnham Lambert**: "I couldn't be more unhappy doing this. I could have just resigned from the board, but that would have meant walking away from the shareholders. I couldn't do that." **– Susan Caminiti**

'GOD OF MANAGEMENT'

■ In a curious mix of capitalism and religion, Konosuke Matsushita fervently believed that the ultimate aim of production was to eliminate poverty and create prosperity. So Matsushita raised production volume and went against conventional Japanese practices by *lowering* prices. **Matsushita Electric Industrial**, a company that began by making electrical sockets, grew to become the world's No. 1 consumer electronics manufacturer, with annual sales of $38.5 billion. When Matsushita died in April at 94, the Japanese press canonized him as the "god of management." Many Westerners agree, perplexed though they might be by company songs, a tradition he introduced to corporate Japan. Behind this immense success was an intensely curious and spiritual man, who also published a monthly magazine *PHP* (Peace and Happiness Through Prosperity). Like most other Matsushita products, the journal became a best-seller.

– Frederick H. Katayama

Konosuke Matsushita



The times they are a-changin'.

RUSSIA'S ROLEX?

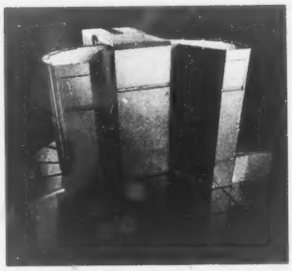
■ The new status symbol wrapping fashionable wrists this summer could be the Soviet military-style watch above. Already a hit in Italy, the somewhat clunky $100 timepiece comes complete with a red star on the face—and a detachable but loser-proof cap to fit over the knob, keeping it ticking 90 feet under water. The watches are assembled in Hong Kong using Russian-made quartz movements and will be distributed in the U.S. by **Gruen Marketing** of Secaucus, New Jersey. Saks Fifth Avenue, Bloomingdale's, and Marshall Field's are among the tony capitalistic emporiums that will begin selling them next month. Each timepiece will be packaged in a small tin can that also contains a replica of the pin that President Reagan and Mikhail Gorbachev wore on their lapels in Geneva in 1985 at their first summit meeting. **– S.C.**

SHAKEOUT IN SUPERCOMPUTERS

■ Having a big rival drop out of your business sounds like nothing but good news. But **Cray Research** may have lost its worldwide competitive edge now that **Control Data**, the only other U.S. supercomputer maker, has abandoned the business. Japanese salesmen are sure to try to convince prospective customers that Cray will not be around to supply parts and service further down the line. Prospective contenders—including Steve Chen's **IBM**-supported **Supercomputer Systems**—will not have a product until the early 1990s.

Currently Cray has 63% of the $1-billion-a-year world market. Aside from Control Data's 6%, three Japanese makers—**NEC**, **Fujitsu**, and **Hitachi**—split the rest. But Cray has lost its lead in Japan, and Europe may be next.

Cray's big disadvantage is relative puniness: In 1988 revenues from mainframes were over $600 million, and sales dropped 20% in the first quarter of 1989. Its Japanese competitors are diversified giants. Hitachi, a $40 billion conglomerate, makes products ranging from rice cookers to nuclear power plants. Since supercomputers are crucial to national security and technological leadership, Clyde V. Prestowitz Jr., former Commerce Department counselor on Japan, says: "If Cray isn't able to hang in there, the government will do its damnedest to keep it in the game." **– F.H.K.**



Cray's Y-MP supercomputer

NOW HEAR THIS

■ **CHALMERS WYLIE,** 68, ranking Republican on the House Banking Committee, on why he wants to toughen the capital requirements for S&Ls as part of a bill that would overhaul the industry:
"It would be the sin of sins to fund this bill without fixing the problem."

■ **ELHAM MANSOUR AL-DEKHEIL,** 28, a Saudi Arabian with a doctorate in education from Ohio State, on her career plans in a country that is yielding to women's demands to work:
"I am going after jobs filled by foreign men, like all those manning computers in banks and offices."

■ **TURNER L. COBDEN,** 59, a former municipal bond underwriter who left Smith Barney a year ago and whose underwriter son was let go by Oppenheimer, on how those in public finance should plan ahead:
"Make it quick and get out."

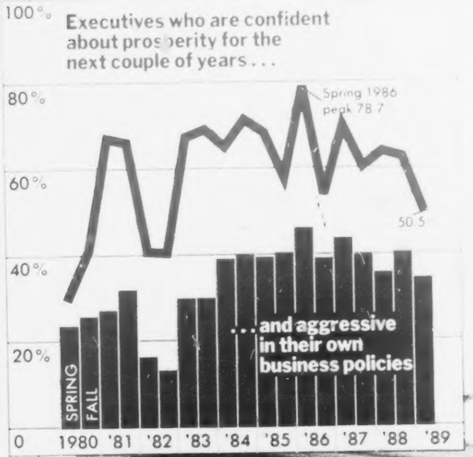
BY VIVIAN BROWNSTEIN

BUSINESS EXUBERANCE FADES AS THE ECONOMY SLOWS

OVERVIEW

- **Inflation and interest rates top the executive worry list: a FORTUNE survey.**
- **After-tax income will slow as inflation eats up wage gains.**
- **So consumer spending will grow by only 2%.**

■ If you find it hard to tell good news from bad these days, just remember, disagreement abounds among the experts too. Signs of slowing growth, such as the March decline in manufacturers' sales of durable goods and the slide in housing starts since January, are regarded as a definite plus by some, the only way to keep inflation under control. Some who fret that the long expansion has petered out are cheered by signs of stronger activity—the healthy rise of orders for capital equipment, for example. Still others have resurrected the dread word stagflation, the mixture of slow growth, double-digit inflation, and high unemployment that afflicted the closing years of the 1970s and was cured only by severe back-to-back recessions.



Extreme language is out of place to describe a humdrum outlook. The expansion is still alive; it is just moving more slowly. The Commerce Department's report on first-quarter GNP had something for everyone. Leaving aside a post-drought jump in farmers' output, real GNP advanced at a 3% annual rate, faster than some expected but a bit slower than the 3.6% in the previous period.

Consumers, who will set the pace in the coming year, have clamped down on outlays, just saying no to enticements from car, clothing, and other merchants since December. For the year, consumers are likely to lift spending by only 2%.

KEEPING CLOSE TABS

Despite clouds ahead, business is still investing: Scanners like the one held by this B. Altman employee help lower costs.

Money hasn't been the problem. Bolstered by high employment and rising wage rates, as well as a bump-up in payments to farmers, real disposable income grew at a 7.5% annual rate during the first quarter after a 3.6% advance last year. But consumers have been saving more lately. They put away a subpar 3.2% of income in 1987, causing lots of hand wringing about profligate Americans. They saved a more respectable 4.2% of income last year.

The big question is how much do consumers want to sock away from now on. If they are heading toward a 6.5% savings rate (the March figure was 6.3%), the norm in earlier decades, the expansion will be in serious trouble. Our own forecast is for savings to average 4.5%, only a bit higher than last year. One reason: Real income won't increase much. Employment will grow more slowly, and inflation is speeding up about as much as wages. So aggregate real after-tax income will advance by only 1.5%.

Executives responding to FORTUNE's surveys of the business mood and of inventory plans reflect the mixed state of the economy—spirits are damped. Confidence in the general outlook is lower than at any time since 1982, and fewer characterize their own policies as aggressive (see chart). Interest rates have replaced the budget as the major concern; 68% expect high interest rates will be an obstacle to continued expansion, vs. 39% who felt that way six months ago.

As a consequence, executives are less satisfied with the Federal Reserve than they have been since last spring. The number who think the Fed should ease up has doubled, though to a still relatively small

PHOTOGRAPH BY KEN KERBS

THE SLIDING INVESTMENT MYTH

Nowadays it is almost a cliché to say the U.S. is devoting much less of its output to plant and equipment, imperiling future economic growth. Well, don't say it, because it just isn't so. The facts are entangled in the esoteric world of national income accounting, but the key question is depreciation. In a paper given before the Carnegie-Rochester Conference on Public Policy in April, Frank de Leeuw, chief statistician of Commerce's Bureau of Economic Analysis, argues convincingly that the number to watch is real *gross* investment—the inflation-adjusted spending for capital goods—rather than commonly used *net* investment—the spending less depreciation.

Subtracting depreciation supposedly corrects for deterioration in the equipment as it wears out or becomes obsolescent. At first glance this seems appropriate and provides the basis for the claims of the doom-and-gloomers. During the 1980s, net investment as a percentage of GNP has stayed well below the postwar average.

De Leeuw contends that taking out depreciation leads the analysis astray. The makeup of capital spending has shifted toward short-lived equipment such as computers and trucks, and as this shift is going on it boosts depreciation for a while, thus lowering net investment. As de Leeuw argues, "While net investment *dips* temporarily, capital services *rise* temporarily—because short-lived investment goods emit services at a faster rate than long-lived goods." A truck with a life of ten years, for example, would provide 10% of the value of its total capital services in a year, but a machine with a 33-year life would provide only 3%. And so de Leeuw concludes that net investment "moves in the wrong direction."

After using some technical improvements in the method of adjusting capital goods spending for inflation, de Leeuw calculates the ratio of gross investment to gross domestic product (output provided by labor and capital). The result shows a pervasive uptrend from 8.2% of GDP in 1960 to 12.1% in 1980—and only a flattening since.

CHARLES ARCHAMBAULT

Frank de Leeuw's healthy investment

How does de Leeuw reconcile this less jaundiced view of investment with the low U.S. savings rate? For one thing, he points out what many people haven't noticed, namely that equipment prices have been falling relative to general prices, giving the savings invested more bang for the buck. The other factor he cites is familiar: the inflow of capital funds from abroad that substitute for the meager U.S. saving. Since this inflow is not sustainable at anything like the recent levels forever, domestic saving will eventually have to expand to replace it.

The de Leeuw numbers don't justify complacency for other reasons either. Productivity has grown more slowly in recent years than it did earlier in the period since World War II. The causes are legion (see The Economy). Perhaps to lift productivity faster we do need more investment, not because capital spending is absorbing a shrunken share of output but because other conditions, such as the makeup of the labor force, have changed. But unraveling the exasperating mystery of retarded productivity is a question for another time.

– Todd May Jr.

20%. Another 10% continue to think the Fed hasn't gone far enough. The Fed may indeed keep a tight grip until it can sense an easing of inflation—though for now it isn't pushing interest rates any higher. Business will grumble about high rates, but the expansion should survive.

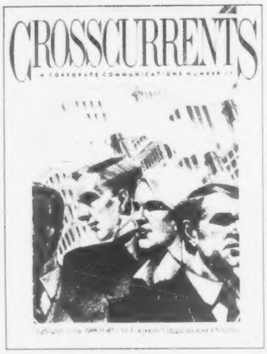
DON'T GET THE IDEA that all the business executives tell a gloomy story. On the contrary, three-fourths report that their own business is currently good or very good, the same proportion as six months and a year ago. Quite a few are worried about continued increases in the cost of doing business. But many more comment that the high level of consumer purchasing power and confidence is the most favorable factor in the outlook, despite the fact that rising wages are part of the cost problem.

They are expecting a repeat of last year's 4.7% increase in prices, most likely a too sanguine view. Measured by the comprehensive GNP price index, inflation jumped to a 5.0% annual rate in the first quarter. Though that included a pay raise for federal employees and the military, it presaged inflation numbers to come. Wages for workers in the private sector are on the rise—FORTUNE expects hourly pay to advance by nearly 6% during the next year, a percentage point faster than during 1988.

Not surprisingly, manufacturers suffered the biggest drop in confidence in the latest survey. Though 1988 turned out to be a good year, especially for the big boys on FORTUNE's list of the 500 largest industrial companies, gains have slowed in the last few months. Manufacturing output advanced by a 4.7% annual rate in the first quarter of 1989, compared with 5.6% in the previous four quarters. And all the rise came in January. So capacity utilization eased a bit in February and March, albeit to a still disturbing level in most industries.

By holding down output now, industrial companies may quash a potential inventory problem. A feature of this expansion, noted in these pages before, has been business's fast reaction to an unplanned stock buildup. The bumpy path of inventory accumulation has played havoc with the GNP growth rate at times, goosing it one quarter and making it look anemic the next. But far better a bumpy road than the roller coaster ride that slack inventory control

AIDS
BLACK MONDAY
CORPORATE IDENTITY
RESTRUCTURING
TAKEOVERS
OUR AGING POPULATION
GLOBAL COMPETITION



These words were heard frequently as top communicators from all over the country gathered at the 1988 FORTUNE Corporate Communications Seminar to discuss "Communication in an Era of Change."

Now you can get the inside stories on how Allstate, MBIA, IBM, ITT, Motorola, Ryder and other companies are operating and surviving in a dramatically changed business environment.

You'll find their ideas and strategies in *Crosscurrents #17*, FORTUNE's annual book of seminar presentations. It's a rare opportunity to see how companies are defining their objectives and refining their values to meet today's challenges.

Order your copy today. Send your check (made payable to FORTUNE) for $22 (add $2 for addresses outside the U.S.) to:

FORTUNE *Crosscurrents #17*
Time & Life Building, Room 15-35B
Rockefeller Center
New York, NY 10020

FORTUNE

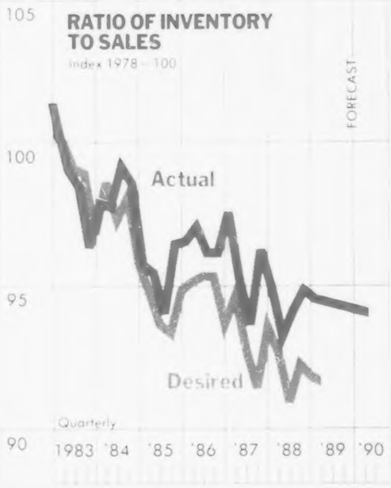
has given the economy at times in the past.

Retailers, distributors, and manufacturers together would prefer 3% less inventory in relation to their sales than they now find themselves holding. This excess, indicated by the gap between the actual and the desired ratios on the chart, is larger than at almost any time in this expansion.

BUT MANUFACTURERS, who are looking at the biggest overhang, are moving quickly to contain the damage. Judging from their responses to survey questions, the bulge occurred because expected sales failed to materialize. More than half said current inventory is higher than was planned for. That is double the number of companies in that spot any time last year. What happened to just-in-time inventory management? Wasn't it supposed to prevent old-fashioned inventory overhang? Well, yes, but some aspects of inventory have grown more difficult. The irregular flow of imported parts and supplies can make control less than perfect. And finished goods can still back up if retailers or distributors cut back too suddenly—stocks were piling up through January but then started to fall. Once finished goods inventories are restored to better levels, look for output to expand again.

Despite problems, inventory turnover has improved significantly during the 1980s. Now retailers and manufacturers are cooperating to go a step past J-I-T inventory management at factories and take the concept right to the retail floor. They call it Quick Response, a combination of steps taken to lower stocks and replenish them much faster. "Much of the initiative is coming from the largest retailers," says Randy Nord of Kurt Salmon Associates, management consultants.

Alex Dillard, executive vice president of the department store chain founded by his father, William Dillard, explains the incentives: "Inventory control is only part of the benefit; sales and profitability increase because you can virtually eliminate out-of-stock situations. Checkout time is quicker,



LESS FOR THE SHELVES

Inventory-to-sales ratios look low, but managers report that the first quarter ended with stocks higher than they wanted.

so sales people can service more customers." According to Mark Frantz, another Kurt Salmon consultant, between 25% and 40% of potential sales are lost because of "stock outs," as they're called. Dillard, J.C. Penney, Wal-Mart, and others of their heft cooperated in a successful pilot project nearly three years ago.

The heart of the system is those bar codes you see at your grocery store; they're starting to appear on everything from dresses to blankets at general merchandise and department stores. The machines that read the bar codes and transmit sales information automatically up the line are spreading rapidly. Frantz says that 200,000 devices are slated to be installed at the top four chain retailers—Sears, Penney's, Wal-Mart, and K mart—more than the 175,000 units now in grocery stores.

The better controls could put inventories on a smoother path, but not for a while. A correction is in order now. FORTUNE expects accumulation to fall from the $43 billion annual rate of the first quarter to an average of $20 billion over the next year, as manufacturers and other businesses adjust to slower growth in sales. The smaller buildup will hold down overall GNP growth this quarter. It could temporarily offset much of the strength expected elsewhere, such as the rise in capital goods and exports, and thus leave the economy on a lackluster course. F

CHIEF ECONOMIST *Todd May Jr.*
ASSOCIATE ECONOMIST *Vivian Brownstein*
STAFF ECONOMIST *Maureen F. Allyn*
RESEARCH ASSOCIATES *Lenore Schiff*
and Lorraine Carson
FORTUNE'S *forecast is produced by this magazine's economists using our own economic model.*

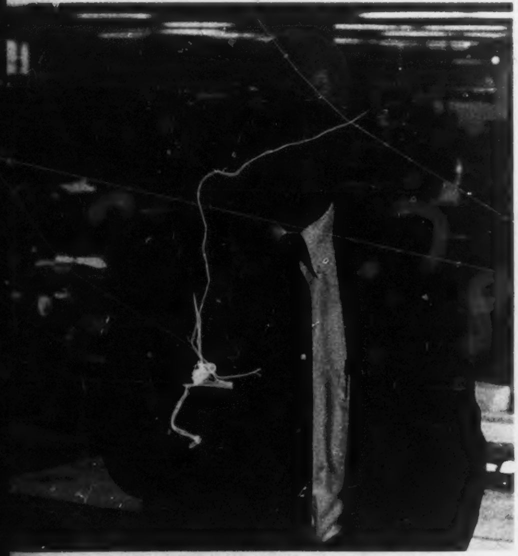
COMPANIES THAT COMPETE BEST

These killers will do just about anything for another percentage point of market share. They will innovate, emigrate, and acquire. Hell, they'll even restructure the company. ■ *by Bill Saporito*

CALL THEM market giants, dominant players, or, more viscerally, "killer" competitors: These are companies you don't want to come up against in your worst nightmare. In the businesses they're in, they amass crushing market share. Then they amass some more.

Some bear familiar names: Eastman Kodak, Perrier, Emerson Electric, a powerhouse of the electric motor business. Others you may have heard of only if you've had the bad fortune to try to sell against them: Unifi, the big guy in selling textured polyester yarn; Jostens, the class act in class rings and other school memorabilia: AMP, manufacturer *extraordinaire* of electrical connectors. In their managerial tenets, they all have a lot in common. Their watchwords:

■ Market share matters. The 90th share point isn't as important as the 91st, and nothing is more dangerous than falling to 89. "We don't like to hear 'We have such a large market share' as an excuse for complacency," says Don C. Lein, president of Jostens. "There are companies that are market leaders who grind out a little bit larger share year after year."



Ringleader: H. William Lurton of Jostens

■ Understand and remember precisely what business you are in. This is harder than it sounds. What business is Perrier in? Water? Nope. Soft drinks? Wrong again. Try natural beverages, a subtle distinction that means approaching customers quite differently. Would-be rivals, including Anheuser-Busch, Nestlé, and Coca-Cola—no marketing slouches—missed it.

■ Whether it's broke or not, fix it—make it better. Not just products, but the whole company if necessary. Emerson and AMP both have decades of success behind them and long histories of steadily increasing dividends. Laurels to rest on? Hardly. Over the past five years each has put itself through wrenching structural and strategic changes to meet the challenges of the marketplace.

■ Innovate or evaporate. Particularly in technology-driven businesses, nothing quite recedes like success: An upstart's product or marketing improvements can undermine a leading position in months. Kodak recently introduced its best film ever, Ektar, just two years after introducing another world's best, Kodacolor Gold film. Company executives pledge to repeat the process again soon—before Fuji Photo Film does.

■ Acquisition is essential to growth. Forget the not-invented-here syndrome. Emerson evaluates 600 companies a year as possible acquisitions, even though it typically ends up buying fewer than ten. The most successful purchases, the killer competitors say, are in niches that add a technology or a related market.

■ People make a difference. Tired of hearing it? Too bad. Both high-technology outfits such as AMP and low-tech ones such as Perrier and Jostens spend abundant time and money on selecting, training, and motivating workers.

■ There is no substitute for quality and no greater threat than failing to be cost competitive on a global basis. These are complementary concepts, not mutually exclusive ones.

LONG USED to dominating their markets in the U.S., the killer competitors increasingly appreciate that they must now do the same on a global basis (see The Economy). In his 15 years atop Emerson Electric, Chief Executive Charles "Chuck" Knight, 53, ratcheted the company's motor business—for power tools, appliances, and industrial purposes—from third place in the U.S. to first by 1980. To get there, Knight invested heavily in motor technology and manufacturing and infused his managers with his own impatience. By 1984, though, Knight was watching his market share being nibbled away by Japanese and Taiwanese competitors that underpriced Emerson by 30% in some appliance components.

Knight and his managers reacted with a sweeping realignment that reverberates to this day, creating a world-class competitor in a hurry. "Man, we moved this company," says the effervescent Knight. Literally. Knight moved more than 3,000 jobs offshore, closed 49 of some 250 plants, and vowed that never again would Emerson let itself get pushed into such a vulnerable cost position. "Our response was to get our costs down so that we were better than anyone else in the world," says Knight. "It was not a fun time."

Of such short-term pain is long-term success made. Knight won few fans when he shifted one-third of the 600 jobs at the company's Therm-O-Disc operation, which makes components such as temperature controls, to a Mexican factory to take

REPORTER ASSOCIATE *Cynthia Hutton*

advantage of lower wage rates. Sure, the company could have lowered the price on its domestically manufactured components, protecting share temporarily and keeping the jobs in the U.S. But then, argues Knight, it would have been only a matter of time before all 600 jobs were lost: "The thing that we didn't really understand when we started this process was that by moving the 200 we not only protected the other 400, but the move put us in a position to get more market share." Exporting the jobs lowered average cost, allowing Emerson to cut price. With the resultant additional business and more favorable currency rates, the company has been able to add back the 200 jobs, plus 400 more.

The same attitude that Emerson takes toward competitors—in your face, approximately—also prevails in company councils. "We are very confrontational. The minute you back off, a little of the intensity drops," says Knight, whose own intensity level is about 327 on a scale of 1 to 10. Emerson *executives tread carefully if they want to* add plant capacity. Don't measure the anticipated return based on what the existing plant does, Knight warns them. That's falling for the dreaded low-cost delta syndrome—comparing yourself against yourself, rather than against the world best.

WHEN EXECUTIVES at Emerson's In-Sink-Erator division in Racine, Wisconsin—it makes kitchen disposers—sought to add capacity, Knight wanted to know what the return would be compared with that of a competitor's Taiwanese plant. If the In-Sink-Erator folks couldn't beat the world cost, they would not get funds. They could and did. Says Knight: "There are very few executives wandering around Emerson not knowing what's expected."

In-Sink-Erator may have an in-sipid name, but it demonstrates Emerson's competitive philosophy. Emerson bought the company in the Seventies, when it had a decent 30% market share. Last year In-Sink-Erator commanded more than 70% of the market. With statistical process control, just-in-time inventory, and make-it-right-the-first-time tactics, the Emerson division has lowered its in-plant quality costs by over 25% per unit produced. Service claims have dropped to 0.4 per 1,000 units per month, down from 2 per 1,000.

By making improvements like these, Emerson has turned more than half its products into market leaders; 84% are either first or second. It's a figure the company pays attention to: Emerson has pushed the number up almost a point a year over the past ten years. In 1988 the company increased revenues 8% to $6.65 billion, while profits climbed 13% to $529 million. And with a 10%-a-year average growth in revenues, Emerson has added nearly 6,000 jobs in the U.S.

continued

SHADES OF GENEEN AT EMERSON ELECTRIC

COMPANY	1988 SALES ($ millions)	BUSINESS LINE	MARKET SHARE (est.)	COMMENTS
ALCO STANDARD	$3,809.6	Paper distribution	15% U.S.	Hundreds of competitors; no one else close
AMP	$2,669.7	Elec./electronic connectors	20% worldwide	Quadruple the size of the No. 2
ANHEUSER-BUSCH	$8,924.1	Beer	42% U.S.	This Bud wants half the market
BRUSH WELLMAN	$345.8	Beryllium-engineered products	65% worldwide	Owns *the* beryllium mine in the West
CLOROX	$1,259.9	Bleach	50% U.S.	Now going after P&G's detergents
DELUXE CORP.	$1,196.0	Check printing	50% U.S.	Earnings you can bank on
EASTMAN KODAK	$17,034.0	Consumer film	50% worldwide	A giant reawakened
EMERSON ELECTRIC	$6,651.5	Disposers	72% U.S.	No. 1 in lots else, too
GILLETTE	$3,581.2	Razors and blades	55% worldwide	Products in every market segment
JOSTENS	$595.7	Class rings	40% U.S.	Chief competitors just merged to fight it
LOCTITE	$416.9	Anaerobic adhesives	80% worldwide	Has stuck to its very small niche
McDONALD'S	$5,566.3	Fast food	25% U.S.	Sold 5 billion burgers last year
MEDTRONIC	$653.3	Pacemakers	45% worldwide	Created first workable cardiac pacemaker
PERRIER GROUP OF AMERICA	$560.0*	Water	22% U.S.	Future U.S. water problems a boon
PRODUCTS RESEARCH & CHEMICAL	$100.3	Aircraft sealants	94% U.S.	Many proprietary polymers
RIDDELL	$20.0*	Football helmets	65% U.S.	Expanding into shoulder pads
ROHR INDUSTRIES	$906.8	Commercial nacelles	85% worldwide	Likely to run at 100% capacity for years
UNIFI	$298.0	Texturized polyester yarn	70% U.S.	Proving that polyester isn't dead

[illegible]

SHADES OF GENEEN AT EMERSON ELECTRIC

Emerson Electric's Chuck Knight can't understand it. One of his major customers, an appliance manufacturer, is still buying motors from General Electric, a competitor of Emerson's. GE, Knight hastens to point out, makes not only motors but also appliances: "It's crazy. Why subsidize your competitor?" Knight hopes to demonstrate to this customer that giving Emerson the business will lower his costs and raise GE's cost of doing business. It probably wouldn't hurt Emerson much, either.

Deliciously aggressive, this, and pure Knight: driven, calculating, and willing to body-punch when he gets in close. Knight, a tall, athletic man who plays a mean game of racquetball on the company court, has been pushing Emerson hard since 1973, when he segued into the CEO's job. He was then a management consultant in his father's firm, Lester B. Knight & Associates Inc., helping Emerson, a longtime client, in its search for a new chief. Eventually he decided to throw his own hat in the ring. Emerson chose well. In those days the company was mostly a motor manufacturer, with $940 million in annual sales. On the path to spectacular growth—last year's sales were $6.7 billion— Knight successfully shifted the company's core from electromechanical technology to electronic technology, along the way fending off a three-year lull in U.S. manufacturing from 1984 to 1986.

Emerson's growth is propelled by twin corporate ambitions: to achieve market leadership and to be "best cost" supplier. Knight will not accept being anything less than best cost, meaning lowest cost at a differentiated-quality level. That entails figuring out what the competition's costs are before Emerson builds new plants. Through judicious intelligence-gathering—wrangling a peek at competitors' plants, for example—Emerson has done just this. Says Knight: "We knew what Makita's and Bosch's and Black & Decker's costs were. We never would have built the plants we did without knowing."

To get market leadership, Knight is willing to buy other companies, as he did last year in purchasing Liebert Corp., which gave Emerson worldwide leadership of the power-conditioning market—products that ensure the consistency of the current going into sensitive electronic devices. He has also put pressure on his troops to devise new products, with the goal of getting 20% of sales from products five years old or less. The company is now at 18%.

Knight: driven and deliciously aggressive

Very little at Emerson happens by chance. Although corporate planning is not as chic these days as it was a decade ago, at Emerson it remains in fashion. Knight estimates that he devotes perhaps 60% of his time to reviewing plans submitted to him. The heads of Emerson's 50 or so businesses each spend about three days a year at headquarters in St. Louis presenting plans—very specific ones—to Knight and a team of his top lieutenants.

At Emerson planning is a line job, not a staff function. "The people who develop the plans implement them," says Knight. "That's where we shine." To keep track of the plans, Emerson executives submit monthly operating reports indicating how well they are doing, the criteria being sales growth, profitability, and return on capital. Review of the reports can be quite up close and personal, reminiscent of the grilling Harold Geneen used to give his executives in the halcyon days at ITT. Says Knight: "It isn't meant in a critical or demeaning sense. It's meant in the spirit of 'Boy, you'd better be ready to stand up and defend what you believe in.' "

If things aren't going to plan, says Knight, the problem usually isn't in the plan: "People don't fail in planning; they fail in implementation. Why? Well, my fundamental belief is that they fail because of the lack of ability to get people involved and committed." To make sure he has the right people in charge, Knight spends lots of time in his personnel command post, a room in which the names, photos, current positions, expertise, and experience of his top 700 executives are arrayed on magnetic boards, by division and business. If Knight needs an experienced manufacturing executive for his Xomox valve division, he can likely find him or her right there on the wall.

Knight places a premium on the autonomy of the various subsidiaries—operations with names such as Alco Controls, Appleton Electric, and Micro Motion. "I'll give you a dollar every time you see the Emerson name at one of our companies," says the CEO. (He owes us a buck.) Profit and loss are calculated at the operating unit level. Although Emerson's sales have increased more than sixfold under his tenure, the size of its corporate staff hasn't budged.

Some of that autonomy, however, is being sacrificed to the effort to go global. Emerson has assembled divisions with like technologies into business groups, with an eye toward selling related products from different groups all together to Emerson's biggest customers worldwide. Those division heads need not get a power complex, though. Says Knight: "We will not, in our accounting systems, even add up a group's sales and earnings. It's irrelevant."

Kodak President Kay Whitmore refocused the company to hit back at Fuji Photo Film.

IN THE SUSQUEHANNA Valley of central Pennsylvania, rarely mistaken for Silicon Valley, sits the world's leading manufacturer of electrical and electronic connecting devices—at their simplest, the plugs at the end of computer cables. More complex connectors represent as much as one-third of the cost of some computer subassemblies. Simple or complex, they are made by AMP, a killer competitor worldwide.

Its traditional strength has been in design and production—the ability to manufacture whatever the customers want. "We engineer the hell out of everything," says Harold McInnes, the cheerful mechanical engineer who is AMP's vice chairman. That attitude has made AMP the largest player in a fragmented industry, with about 20% of a market fought over by more than 500 competitors.

AMP's competitive advantage begins long before products hit the market. The company spends an enormous amount of money, 9% of sales, on its research and development and engineering, and funds development work for Digital Equipment, IBM, and other original equipment manufacturers. By getting a seat at the design table, AMP has a hand in engineering the connecting devices that it hopes to supply. Neat trick.

The company also works diligently to have a voice in the development of industry standards. This is particularly critical where technologies are evolving, such as on the interconnect devices used in local area networks of computers and telecommunications. The folks at newly competitive AT&T thought they had a good chance of bending the standards committee their way, but AMP was ready. Its products became the standard connector on major networking systems such as Ethernet and IBM's Token Ring system.

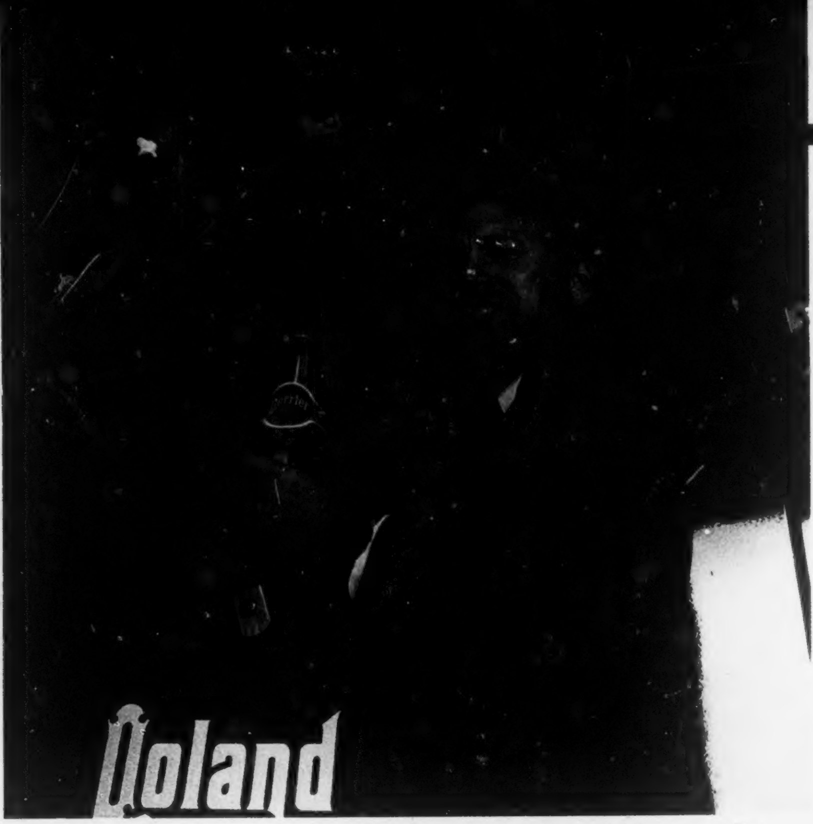
AMP began in the Forties as a manufacturer of electrical terminals and expanded rapidly during the electronics revolution. Now, with the electronics industry growing 10% to 12% a year, down from 15% to 20%, AMP must eat somebody else's market share if the company is to sustain its traditional 15% a year growth. Says Walter Raab, the company's quietly confident chief executive: "When you start talking about growing 15% in a year, to $2.7 billion in revenues, you are talking about adding a company the size of one of our competitors, which we have done."

Many of the manufacturers that AMP sells to are bent on eliminating all but a few of their suppliers by raising quality and delivery requirements even as they put the screws on price. In response, AMP is in the second phase of a quality-improvement campaign that began with the goal, set in 1984, of improving quality by a factor of ten in five years. Last year the company turned the heat up again, demanding of itself another tenfold improvement over the three years ending 1990. This is not a campaign consisting of slogans and buttons but a highly technical program measuring some 50 variables across all functions from engineering through secretarial. So far AMP has lowered its "cost of quality," the amount spent getting things right, from slightly more than 16% of sales to about 10%.

UP AGAINST the likes of Nestlé, Coca-Cola, and Anheuser-Busch, it should be all but impossible for a smaller company to gulp market share and profits in the bottled-water business. But Perrier Group of America has done so. Perrier is best known as the importer of fizzy French H_2O, but the company's still-water business runs much deeper: It owns nine brands of bottled water, including Poland Spring, Great Bear, and Ozarka, that have combined U.S. market share of some 20%. No other company is close. Perrier is growing fast too, faster than the bottled-water industry's 15% a year rate, which means it's taking business from others.

Up against the likes of Nestlé and Coca-Cola, a smaller company shouldn't be able to gulp share. But Perrier has.

Like most successful competitors, Perrier has a basic understanding of all phases of its business—in its case, really two businesses. The first is sparkling water, an alternative to soft drinks or alcohol. The other is a tap-water replacement. Perrier's still-water business has less to do with classic consumer product marketing. Most product is delivered to homes and offices and dispensed through water coolers. That business, says Ronald V. Davis, president of Perrier's U.S. operations, more closely resembles package delivery à la Federal Express than it does pushing soft drinks. The quality of service is just as important as the quality of the water. So Perrier outfits its route drivers in all-American uniforms and trains them as if they were



JONATHAN LEVINE—ONYX

Perrier Group of America President Ron Davis has proved that water isn't a commodity.

going to deliver caviar rather than H_2O.

Profitability hinges on service and the efficient management of the route system. For example, when Perrier first took over Poland Spring, an average truck might drive 50,000 miles a year, each day delivering 40 to 50 bottles—admittedly water-cooler–size bottles. Perrier stepped up sales by advertising and referrals, improving its efficiency in the process. The company can run a truck 10,000 miles a year, delivering 150 to 200 bottles of Poland Spring a day. The profits are in the logistics, so building and holding on to the customer base is vital. Says Davis, diplomatically: "This is a different business than Pepsi and Coke are used to."

Busch took on Perrier's Calistoga and Perrier in California in 1986 but abandoned the business last year. Nestlé tried to market Montclair on the East Coast and Vittell in California but washed out, selling Montclair to Perrier in February. Coke has owned Belmont Springs brand, sold in Massachusetts, since 1969, but Perrier's Poland Spring zoomed past it. Busch's and Nestlé's distribution systems were geared more to supermarkets and other retail outlets. Great for soda and beer, less so for water.

In its other business Perrier is practically a generic term for mineral water, although the company spends less than $5 million a year on advertising. The beverage from France represents 70% of the imported-water category, according to the Beverage Marketing Corp. consulting firm. In the past ten years at least 20 companies have taken a run at the green bottle, sans success. Davis is more concerned with expanding the category. To do that, the company has worked hard at shifting the brand's image from chic to healthy, so as to make the brand more acceptable to the masses. Perrier has also taken on the soda crowd by introducing flavored waters. Sales of products bearing the Perrier label are growing faster than the 4.5% growth rate of soda sales nationally.

> **"Even with a very high share, there is no such thing as maintaining market share. Grow it, or it will decline."**

Jostens also sells products but defines itself as in the "recognition" business: The company is the preeminent purveyor of school rings, caps and gowns, and yearbooks. Somewhere along the way, Jostens management recognized that its biggest competitive asset is people.

The company loves to hire teachers tired of measly pay. It thus has a core of former educators selling to educators. The most critical contact isn't with students or parents but with the school administration. Most school systems allow only one company to sell rings to students. So Jostens's sales pitch to administrators is based on the "no problem" premise: that the company can provide a full line of high-quality rings, yearbooks, graduation announcements, and pictures delivered on time, so the school administrators won't have to deal with any complaints from parents and kids. The company has a manufacturing advantage too: five plants spread regionally across the country, making on-time delivery easier.

But people are the key. Says H. William Lurton, chairman and CEO: "You have to keep people motivated to continue to get share. And we have the best training program in the industry. One of the best in any industry." The company also claims the lowest turnover in the industry, critical to maintaining long-term relationships with schools and teachers.

Jostens's 40% market share in rings has been twice its nearest competitor's. Its return on equity last year was an astounding 50.5%, the 12th highest in the FORTUNE 500. The company earned $89 million on sales of $596 million.

OCCASIONALLY even Jove nods, and it takes the interloping of a lesser being to wake him up. The experience worked wonders for Kodak, which has 80% of the U.S. consumer film market, 50% of the global business. Says Kay Whitmore, Kodak's president: "Even with a very high share, there is no such thing as maintaining market share. There are two alternatives: Grow it, or it will decline." In the film business one point of global market share amounts to $40 million in revenues.

As the inventor of film photography, Kodak enjoyed a head start few companies could match. But all that history meant nothing to Fuji Photo Film. In a celebrated marketing coup, Fuji outbid Kodak to become the official film of the Los Angeles Olympic Games in 1984. The move gained Fuji immediate recognition that the company backed with a full advertising, promotion, and retail campaign.

Kodak got the picture. Since then, Kodak has poured it on, unleashing a series of

JOHN S. ABBOTT

AMP's Walter Raab likes dominating 500 competitors.

product improvements that culminated most recently in Ektar 25, 125, and 1,000 films. These films, demonstrably the best ever made, should give Kodak at least a year's breathing space over Fuji and its other international rivals, Agfa-Gevaert and Ilford.

To keep the improvements coming, Kodak shifted from functional management to business units in 1985. It has refocused its photographic products division into six distinct units that address separate sectors of the business—professional photographers, for instance, and the motion picture industry. The company has also changed its strategic focus from single-minded concentration on the end consumer to working on other parts of the business as well. For example, Kodak now uses ubiquitous comedian Bill Cosby to advertise to consumers a program called Colorwatch. The hook is that the print quality is guaranteed if consumers patronize photofinishers that use Kodak's chemicals and paper. Colorwatch and the acquisition of other photofinishers have increased Kodak's world market share in chemicals and paper about seven points, to 48%, says B. Alex Henderson, a security analyst at Prudential-Bache.

Kodak used acquisitions in its campaign to head off Fuji. Over the past three years the company has bought a number of independent film processors, such as Fox Photo, American Photo Group, and CX. The company also entered a joint venture with Fuqua Industries, combining Kodak's U.S. photofinishing operations with Fuqua's Colorcraft not so much to ram more chemicals and paper through them but to make sure that the Japanese don't. Says analyst Henderson: "The worst thing that could have happened to Kodak is for Fuji to have made Fuqua an offer they couldn't refuse."

Killer competitors wisely use their preeminent positions to strike deals others can't. Riddell has around 65% of the market for football helmets, a share butted away from some 20 competitors over two decades of head banging. But the company still competes as though it were protecting a one-point lead. This year the company signed an agreement with the National Football League that gives Riddell the exclusive right to feature the company's name prominently on each of its helmets in exchange for discounts on helmets and other gear made by Riddell and its part-owner, MacGregor Sporting Goods. Riddell Chairman Frederic H. Brooks says the advertising value of just one Superbowl of such exposure could be worth as much as $4 million.

"You must get out there and say, 'I am trying to gain new customers. I am trying to meet new needs.' "

Riddell is hoping to capitalize on this brand-name awareness in a couple of other businesses. The company recently bought an outfit that makes shoulder pads. It is also aiming to get in on the lucrative consumer athletic-wear business in what promises to be a true test of its competitive spirit. Brooks seeks only the high-end performance gear, though, where Riddell can protect its heavyweight image. "We don't want people to put on our wear like they do a Nike or Reebok running suit and then go to the supermarket," says Brooks. "We don't want couch potatoes wearing our clothes."

Some of the roughest, toughest competitors have emerged by holding their own in shrinking markets. Unifi, of Greensboro, North Carolina, is one of the last survivors of over 50 competitors that entered the Seventies as makers of texturized polyester. Such manufacturers take the raw yarn, bulk it up, and make it more elastic so it can be woven into fabric.

Two things happened to the business, both bad. First, good taste prevailed and double knits died. Polyester lost its appeal as a fabric, and demand for textured polyester began dropping, from 1.2 billion pounds per year in the mid-Seventies to 650 million pounds by 1985. Second, foreign producers of finished apparel, which didn't always buy from U.S. sources, gained market share. These two negatives were too much for the likes of Hoechst, Celanese, and Rohm & Haas, which decided to take their money elsewhere. "The returns just weren't there, unless you had a real conviction of what the future was going to bring," says Unifi President William Kretzer. That conviction has brought Unifi about 70% of the yarn sales market.

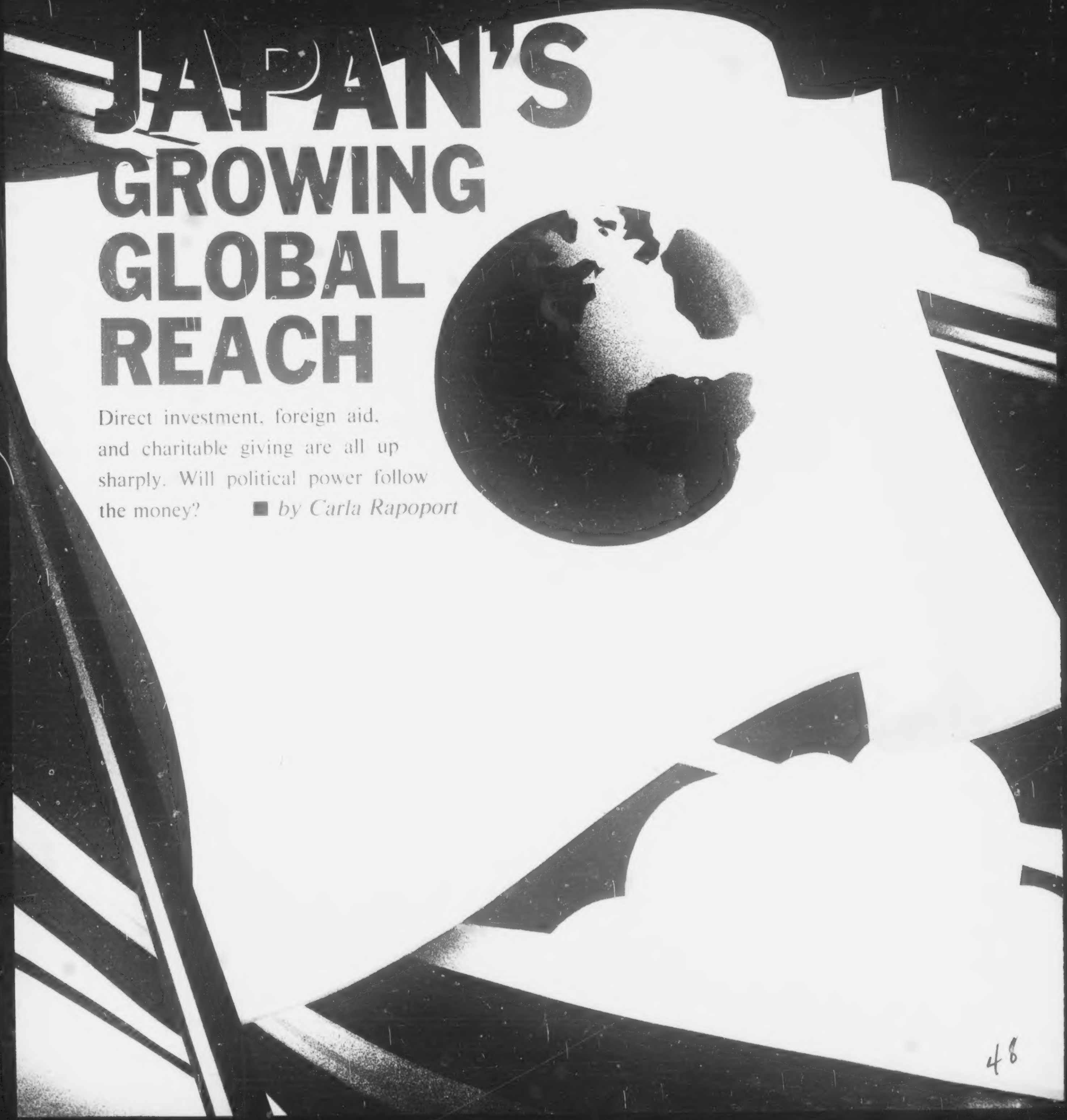
UNIFI HAS INVESTED heavily in the business, adding capacity five times in the past ten years. The company spent big to decrease its costs while increasing product quality. Machines that once spilled out 10,000 pounds of poly per week now do more than 70,000. The company also scoured the marketplace to find nonapparel uses for its out-of-fashion product: Most of its sales now come from business, such as home furnishings—sheets, drapes, and upholstered fabrics, for example.

Perhaps the greatest danger for these competitive winners is that they have won the game, up until now. But most realize the minute they start to ease off is the minute they start to become losers. Says Kodak's Whitmore: "Even with a high market share, you must get out there and say, 'I am trying to gain new customers. I am trying to meet new needs.' You have a more forward-looking, more opportunistic approach. You may end up only protecting your market share, but you will, in fact, protect it." Ray Kroc, the legendary founder of McDonald's, put it another way. If a competitor is drowning, he said, stick a hose in his mouth. F

JAPAN'S GROWING GLOBAL REACH

Direct investment, foreign aid, and charitable giving are all up sharply. Will political power follow the money?

■ *by Carla Rapoport*



THE JAPANESE money tree keeps on shaking—and spreading. Take just the last few months. Toyota announces a $1.2 billion auto plant in Britain, its first in Europe. Fujitsu says it will spend $690 million to turn out computer chips in northeast England. Kawasaki Steel buys 40% of a division of Armco, the American steelmaker, for $350 million. Minebea, the ball bearing maker, acquires the biggest hog farm in Canada and negotiates for a stereo speaker plant in Taiwan.

Add to that recent purchases of thousands of acres of grazing land in the U.S. West, an Australian petting zoo featuring koala bears and kangaroos, and six joint ventures in the Soviet Union, from chemicals to clothing. Japanese investors have been among the biggest angels on Broadway this season and have committed more than $400 million to make Hollywood films (producing three box office flops so far).

And that covers just investments. Last year the Japanese government gave away $10 billion, mostly to Third World countries, to become the world's most generous benefactor. American aid totaled $8.5 billion. Toshiba has just started a $23 million charitable foundation. Beginning this year, Matsushita, the giant consumer electronics maker (Panasonic, Quasar, National, Technics brands), will donate 0.1% of the annual sales of its American subsidiary to charities or cultural activities in the U.S. That should amount to about $5.1 million for 1989. Says President Akio Tanii: "We've always been manufacturers. Now we have to be socially minded. We have to invest in culture, not just technology, and we have to do it all over the world."

Wealthy individuals are shoveling it out too. Yasuhiro Goh, a member of the Bridgestone tire family, just gave $1.5 million to the Phillips gallery in Washington, the largest single donation by a Japanese to a U.S. institution. Says Goh: "When I first entered the library at the University of Tokyo, I saw a plaque that said, Gift of the Rockefeller Foundation. It's time to see plaques in the U.S. from the Japanese."

Will money buy friends for Japan? "We shouldn't forget, the rich man will never be loved," says Teruyoshi Yasufuku, deputy president of Sanwa Bank. "Americans spent so much on poor countries and what did they get? Yankee go home."

A more pertinent question is whether political power will follow the money, as it did for Britain in the 19th century and the U.S. after World War II. No one can yet be sure. The British and Americans matched strong cash positions with the kind of military power Japan eschews. And most Westerners think Japan has little inclination to lead the world, that the second-richest country is simply bent on conquering market after market. As R. Taggart Murphy, a Chase Manhattan executive in Tokyo, writes in the *Harvard Business Review*: "Japan commands wealth but lacks a global vision. The U.S. has a mission but can no longer finance it."

From dominating markets to giving away money, Matsushita's Tanii is a man of the world.

Until very recently, leading Japanese would have quietly agreed with Murphy, but the mood is changing. One way to think about Japan is to imagine that Grand Rapids suddenly became the richest city in America owing to its fabulous furniture exports. No one in Grand Rapids would have any big ideas about spending the money because everybody was so busy making furniture. That was the case in Japan. Now the Japanese are willing to admit they're rich, which changes everything.

In true Japanese style, Japan's new global vision is bubbling up from the bureaucracy of the foreign ministry, the *gaimusho*, instead of being handed down from on high. Says director of aid policy Kenzo Oshima: "Our policy is economics, economic development. We were poor. We've done it. We are not a military power, but we have other strengths."

Japan wants to administer a homegrown cure to poorer countries. It will build the basics—roads, bridges, power stations—then create industries that can earn foreign exchange by exporting. That strategy worked for Japan, thanks to the American consumer. This time Japan plans to be the customer.

COUNTING PRIVATE loans and investments in addition to aid, Japan contributes more than $22 billion to developing countries, amounting to 24% of the world total. Unlike the U.S. aid program, Japan's is not designed to support strategic alliances. Says Oshima, with some emotion: "We do not make decisions because America tells us what countries are important. Our interests may coincide with those of the U.S., but it's

REPORTER ASSOCIATES *Sally Solo, Constance Guske*

ILLUSTRATION BY LAURA SMITH

DAVID MAY

Tourists from Japan feel at home at the Japanese-owned Lone Pine sanctuary in Australia.

a coincidence. We will not be seen as a U.S. puppet!" Thus, Japan sends more aid to the Philippines, because it is a neighbor, than to Turkey, an important U.S. ally in the Middle East.

Under prodding by the *gaimusho* and other ministries, Japan's top business leaders have set up a quasi-private agency called Japan International Development Organization to invest in export industries in developing countries. Half the exports would go to Japan. Over the next five years, the group plans to set up consortiums of manufacturers, trading companies, and banks—mainly though not exclusively Japanese—to sponsor projects worldwide worth more than $1 billion.

WESTERN CRITICS see more than altruism in much of Japan's foreign aid. Officials respond that only some 29% of aid is so-called tied aid, linked to the purchase of equipment or services from a particular Japanese supplier. But the critics claim that the percentage is much higher

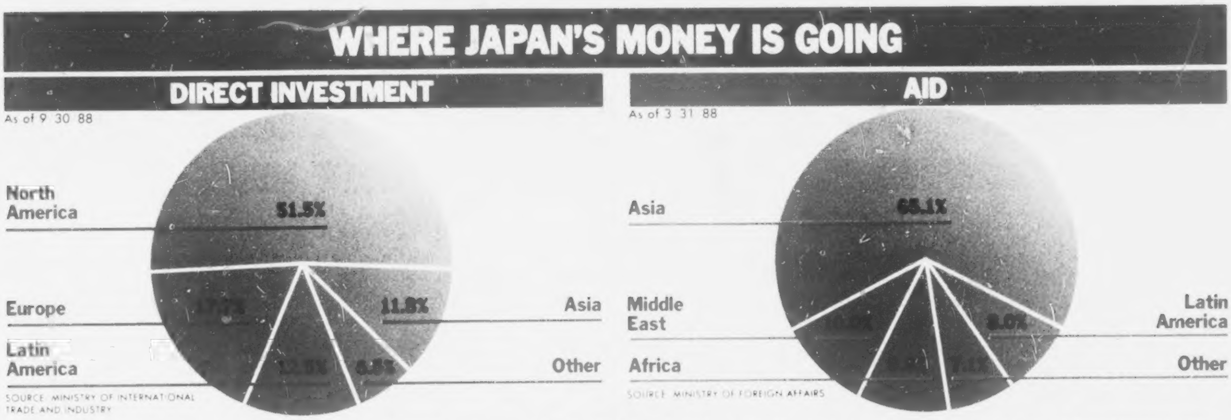
Maurice Strong, chairman of the World Economic Forum, a Geneva-based organization for European managers, says Japan's foreign aid looks like "aggressive assertion of economic self-interest."

Japan makes its biggest impact on the world, and creates the most friction, through overseas investment. It still parks most of an estimated $62 billion in spare cash—the winnings of a huge trade surplus—in U.S. government bonds. This money helps float the U.S. budget deficit, but some Japanese are now suggesting it should be put to better use. Says Akira Nambara, a director of research at the Bank of Japan: "If we just finance America's social entitlement programs, there's no way out of this trade imbalance problem. We should finance U.S. industry, which can improve American competitiveness."

DIRECT INVESTMENT is bound to increase. Nomura Research Institute predicts that worldwide Japanese manufacturing investment could reach $150 billion by 1995. According to the Japan Society in New York, the number of Americans working for Japanese manufacturing companies will almost double by then, to 400,000. Only 3.9% of Japanese manufacturing is now done overseas, but the amount should increase to almost 7% by 1995. The comparable figures at the moment are 18% for the U.S. and 17% for West Germany. Toyota makes only 12% of its cars overseas, compared with 30.5% for General Motors. The number of truly international Japanese companies is still very limited.

If you're a U.S. governor struggling to balance a state budget, it's good politics to make a well-publicized trip to Japan seeking investment. Forty states have permanent offices there, and many foreign governments actively encourage Japanese investment. The backlash sets in as soon as the Japanese unpack their money. When Japanese investors bought three of the best golf courses on the Gold Coast in Queensland, Australia, and tripled greens fees, angry locals forced the community to build a new one. Australian officials, however, refuse to rant against the Japanese. Says Greg Dodds, a marketing official in his country's embassy in Tokyo: "The fact is, Australia is quite dependent on the inflow of capital investment, and the Japanese are the most interested. There really isn't such a thing as a benign overseas investor."

Like unpopular paranoiacs, local indus-



SOURCE: MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY

SOURCE: MINISTRY OF FOREIGN AFFAIRS

Japanese cash has mainly gone in two directions: investment to the U.S. and aid to Asia. Europe should gradually get more investment yen.

tries often have plenty to fear. For years, Japanese automakers' U.S. market share was held down by voluntary restraints on imports. After the Japanese opened American plants, their share rose by more than four percentage points over three years, mostly at the expense of GM. From 1985 to 1988, GM's share dropped from 43% to 36%. Nissan's market share rose to 4.8% in 1989, after dipping below 4% the previous year, and the company plans to double production capacity by mid-1992. The Japanese are scaring auto-parts makers too. Lee Kadrich, an executive of the Automotive Parts & Accessories Association, says 300 Japanese parts makers will have set up shop in the U.S. by the end of this year, with another 100 expected by 1990. He calls it a "situation of great danger" for the Americans.

Japanese investors brought you Whoopi Goldberg and Sam Elliott in *Fatal Beauty*.

To allay such fears, many Japanese companies form joint ventures or promise to use local suppliers. Mazda plans to produce cars in Europe at a Ford plant to avoid charges of creating excess European capacity. Toyota says 80% of the parts that go into its British-built cars will be made in Britain. Mizuno, which aims to go from zero to 10% of the U.S. sports equipment market by 1995, plans no exports from Japan, only local production or exports from developing countries. Partners are especially useful in the close-knit business of ranching. When Japanese businessman Masaaki Tanabe wanted a U.S. cattle spread, he prudently formed a partnership with a California rancher.

Japanese managers have had more than a little trouble fitting into America's litigious equal opportunity culture. Honda, Sumitomo Corp., Sanyo, and Matsushita's Quasar have all been hit with age, sex, or racial discrimination complaints in recent years. Honda settled out of court, and Sanyo's case was reversed on appeal. Suits against Nikko Securities and C. Itoh, a large trading company, are still pending. Says Lewis Steel, a New York lawyer who has pursued three major sex discrimination suits against Japanese companies: "The men who run these subsidiaries bring their biases with them from Japan. They treat women like office flowers."

Two University of Michigan professors who examined how Japanese companies went about finding plant sites—including Honda in Marysville, Ohio, Toyota in Georgetown, Kentucky, and Nissan in Smyrna, Tennessee—discovered a common thread. The rural counties where all three built new plants have few black residents. The professors point out that the Japanese have thus altered hiring patterns in an industry with traditionally high black employment.

Suspicion of Japanese attitudes toward blacks stems in part from a 1986 statement by then Prime Minister Yasuhiro Nakasone to the effect that blacks and Hispanics lowered the level of intelligence in the U.S. He later retracted it and apologized, but the damage was done. Clarence Thomas, a lawyer who is chairman of the U.S. Equal Employment Opportunity Commission, says the agency keeps an especially close eye on Japanese companies in the U.S.

AFTER ITS SETTLEMENT with the EEOC, Honda commissioned its own report on racial problems in the U.S. The report notes that unlike U.S. companies, Japanese automakers have not adopted minority dealership programs. It also observes that Japan's huge trade position with South Africa could rebound badly against Japan in the U.S. "Should black leaders attack Japanese companies," says the Honda report, "they have little or no risk of doing any lasting damage to their own standing in the U.S. Japan-bashing has no loser." Tetsuo Chino, Honda's vice president for North America, promises his own version of affirmative action. He says that if the company has two equal job applicants, black and white, Honda will hire the black "every time." His goal, he says, is to have a greater representation of women and blacks than do American auto companies.

Black or white, few Americans have made it into high management ranks of Japanese subsidiaries. The Japanese say they are trying to correct that. In March, Matsushita named Richard Kraft as head of U.S. operations, the first non-Japanese to hold that job. Kraft came to Matsushita

Land in California: The Shasta Springs cattle ranch north of Sacramento is a joint venture.

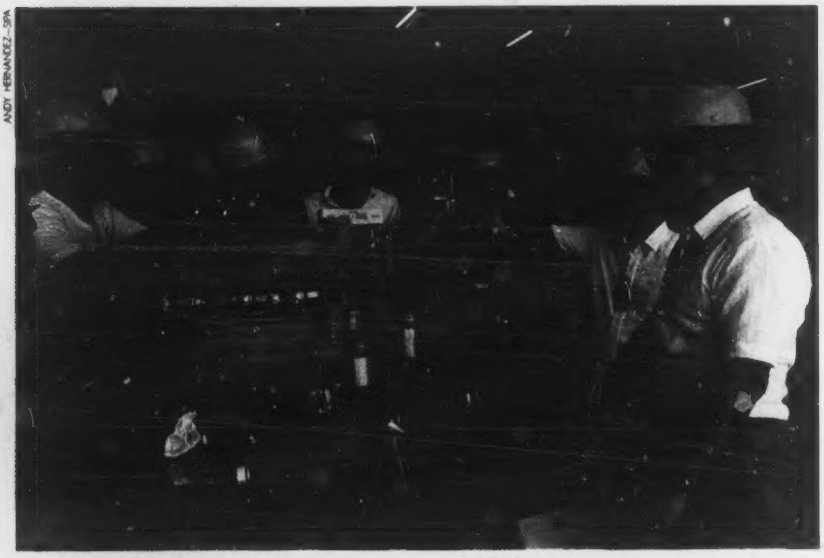
from Motorola in 1974 when the Japanese company acquired Motorola's television manufacturing division. Toshiba, which has 4,000 employees and annual sales of $2.6 billion in the U.S., has no Americans in the subsidiary's top echelon. President Joichi Aoi says that while he hasn't set a deadline, he aims to change that. An American manager wouldn't have to speak Japanese, he declares, "but he must understand our business ways and what headquarters in Japan wants."

Honda's Chino thinks an American may someday sit on the company's board in Japan. Nissan will shortly move the headquarters of its European division from Tokyo to Amsterdam and expects eventually to staff it with European managers.

In a startling break with the past, the Japanese are also forming alliances with Western companies. They are slowly unwinding the old *zaibatsu*, or industrial groupings in Japan, that have been impervious to foreigners for so long. Munemichi Inoue, an economics professor and head of Marubeni Corp.'s economic research unit, says that if a large Japanese company can get a better price from a foreign supplier than from a *zaibatsu* member, it is more likely than ever before to shop abroad.

Have the Japanese really learned the meaning of altruism? Yes, in a Japanese way. Thoughtful Japanese business executives provide two answers. First, a more developed world means a bigger world market, not just for Japanese products but also for the products of Japan's nervous competitors. Says Nambara of the Bank of Japan: "Some country has to take over the role that the U.S. played after the war. It will take time for the U.S. to eliminate its deficit. In the meantime, we can take over that role, the role of enlarging and stimulating the world economy." A prominent auto executive points out that a 10% increase in the global car and truck market means five million more vehicles. The extra capacity Japan is building in the U.S. and Europe would not meet that demand, so other auto companies would get a lot of new business.

Second, Japan needs a lot of internal change. Japanese consumers pay some of the highest prices in the world for everyday items, due in part to an archaic distribution system loaded with middlemen. Japan's financial system is still heavily regulated, stultifying competition, while Japan's rice farmers remain among the most protected in the world. Prominent Japanese now agree that reform must come. Says Yasufuku at Sanwa Bank: "The greatest change ahead is reform of our distribution system. Japanese consumers have figured it out. They go overseas and they realize we are out of line. Before, they didn't know that Canon cameras were cheaper in New York." Already, less expensive goods from South Korea and Taiwan are among Japan's fastest-growing imports.



ANDY HERNANDEZ—SIPA

Training in the Philippines: A Japanese instructor (right) explains workings of an engine.

MANY OF THESE changes can be achieved by the friendly alliance between government and business. The leadership, though, will have to come from business. Most senior members of the ruling Liberal Democratic Party have been crippled by the Recruit bribery scandal, which brought down Prime Minister Noboru Takeshita. Many executives welcome the chance to play a larger leadership role. Says Yoshikazu Kawana, Nissan Motor's director of European sales: "We are a rich country, but we don't have political leaders who can be major players in the world."

The Recruit shambles could enable the Japanese to rid their political system of special interest groups and domestic influence peddling. Maybe even an international statesman or two will emerge. Not long ago, Japanese business leaders were fond of quoting the old saw that Japan would catch cold whenever the U.S. sneezed. No one says that anymore. Now the issue in Japan is how to say *Gesundheit* to the U.S. gracefully and get on with the business of leading. F

HOW SAFE ARE YOU IN THE AIR?

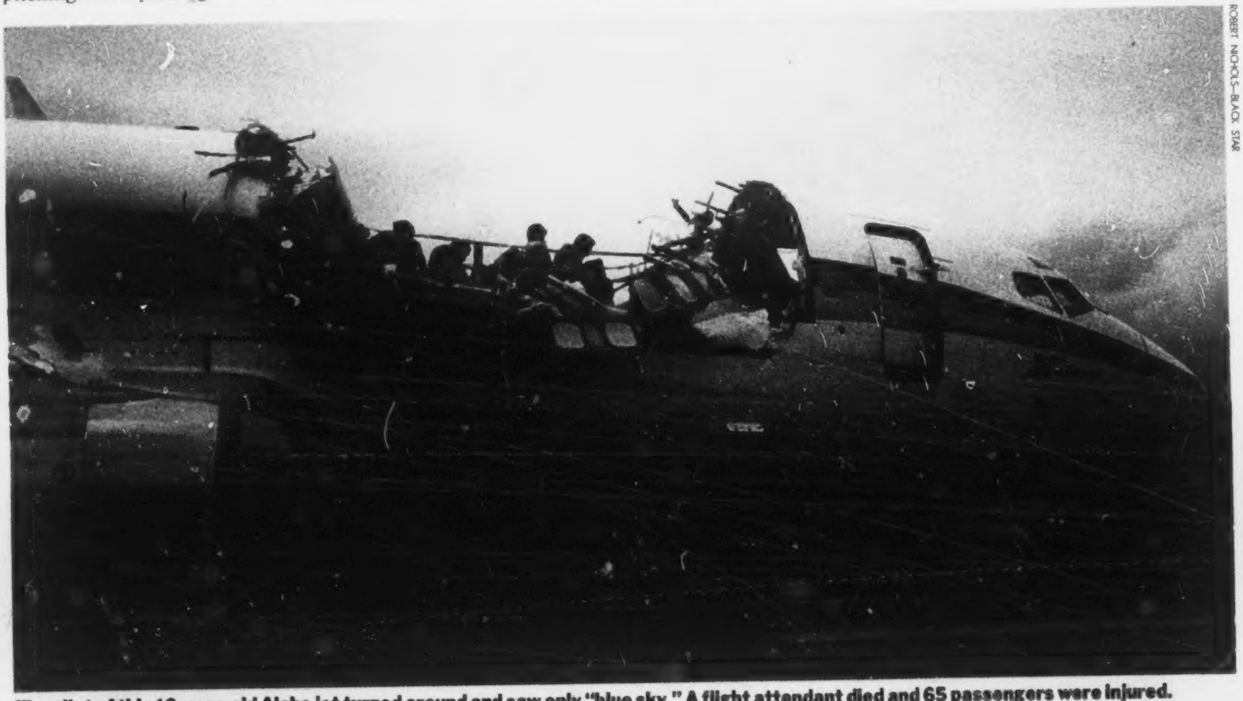
Terrorists and an aging fleet of aircraft threaten the industry's impressive safety record. Maintaining safety in the air and security on the ground will get costly. ■ *by Anthony Ramirez*

BREATHLESS and sweating from lugging your garment bag, you have just made it onto a packed plane. You settle into your seat. A man squeezes by, carrying a radio-cassette player. Wait a minute. Isn't that the way terrorists blew up Pan Am flight 103 over Scotland? You look up at the ceiling—which reminds you of that Aloha Airlines flight, where part of the aging jet's fuselage tore away like a convertible top and sucked a hapless flight attendant from the plane. Are those cracks you see? How *old* is this plane? You watch the ground crew closing the cargo bay door. Didn't that hatch shear off the other day on a United 747, abruptly pitching nine passengers *and their seats* into the Pacific Ocean? The door on your jet closes with a thud. Suddenly the last place you want to be is on a plane.

And thereby hangs our tale, or at least a major portion of it. For while air travel is as safe as ever, *perceptions* of danger have increased, and perceptions of fiery or watery death have a horrible reality of their own. Those perceptions will worsen. By some projections, the number of passengers who board planes worldwide will double to more than two billion by 2000. On the odds, as traffic surges so will the number of accidents reported in living color on your TV news.

Reality could get worse too. In one important aspect of safety, the upkeep of aircraft, the next few years will be especially critical. The world fleet averages 11.7 years old, the U.S. fleet 12.7, and the most elderly commercial aircraft are over 24. Airlines ordering planes today won't get them from sold-out manufacturers until the mid-1990s. Carriers in need of "lift," as it is called in the trade, rarely junk old aircraft; only 54 commercial jets were scrapped last year out of a worldwide population of some 7,900. The crunch is particularly severe in the U.S., where the fleet age has increased 50% since 1980. Leasing companies and used-aircraft brokers are thriving, multiplying the number of owners that a single jet will see in its lifetime and increasing the chance of maintenance screw ups—George was supposed to have done it.

continued


ROBERT NICHOLS—BLACK STAR

The pilot of this 19-year-old Aloha jet turned around and saw only "blue sky." A flight attendant died and 65 passengers were injured.

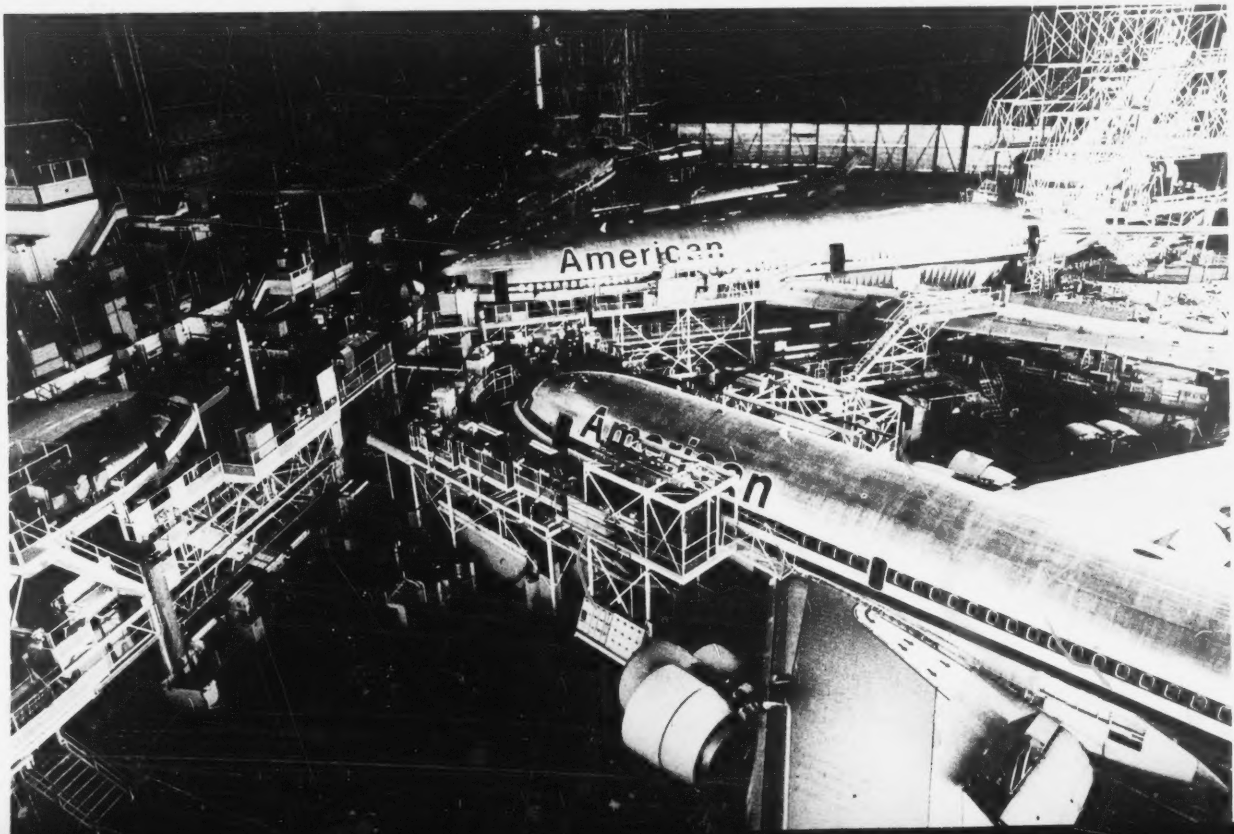
Under the cost pressures of deregulation, the U.S. industry as a whole has scaled back maintenance spending as a proportion of overall outlays. About 11.2% of operating expenses went to upkeep in 1987, compared with 13.2% in 1977, even though older planes cost more to maintain. There are two ways of looking at those numbers. The carriers attribute the savings to greater efficiency, notably including givebacks by the mechanics' union; the union says the carriers have been nickel-and-diming maintenance budgets. Patrick Murphy, chief operating officer of Avitas Inc., a Reston, Virginia, firm that does maintenance audits for 80 airlines worldwide, thinks more spending is needed: "All the money that U.S. carriers cut from maintenance is going to come back and bite them."

FOR THE RECORD, plane travel is reassuringly safe. Last year—even with 709 passenger deaths worldwide, 259 of them on Pan Am 103—the chance of being killed was barely one in 500,000 departures. Indeed, for the past 20 years the odds have blipped randomly between one in 500,000 and one in 250,000. Measured in deaths per million passenger-miles, cars are 30 times more lethal.

Above, a mechanic inspects a Boeing 767 engine at American Airlines' Tulsa maintenance facility, the company's largest. Below, aircraft undergo the thorough inspection known as a "C" check.

This is not to say that air travel could not be safer yet. Many steps to reduce accidents caused by weather or human error, such as modernizing airports and updating computers, are proceeding at a lamentably slow pace because Congress and the Administration have frozen spending from the $6 billion Aviation Trust Fund, the proceeds of a ticket tax imposed to pay for safety improvements. Not spending the fund makes the federal deficit look smaller.

STILL, progress is being made. Take the deadly weather pattern known as wind shear, which pilots fear more than any other atmospheric hazard. Wind shear is an invisible, violent downdraft that can reach speeds of 80 miles an hour and dash a plane to the ground during takeoff or landing. By 1993 the FAA will require all U.S. commercial jetliners to carry wind-shear detection equipment that costs as much as $50,000 per plane. Honeywell, Sundstrand, and Safe Flight Instrument Corp. of White Plains, New York, make the devices now or plan to soon. They don't warn of wind shear until the plane is already in it, but even a few seconds give a skillful pilot a chance. Honeywell's machine recommends specific evasive action. Later



in the 1990s large ground-based Doppler radars will warn of advancing wind shear, but only at the largest airports: a test is under way at Denver's Stapleton. Better airborne detectors that use lasers and infrared sensors are being developed.

HONEYWELL CLAIMS more progress against midair collisions. The FAA is requiring airlines to install traffic-alert and collision-avoidance systems by 1991. The machines, which cost as much as $100,000, are basically airborne beacons that detect similarly equipped planes. When two or more planes near each other, alarms sound, giving pilots 30 seconds to maneuver. If the other plane doesn't have a receiver, of course, it won't get a warning. And pilots complain that the system goes wild in "Indian country"—clouds of small private planes, like the popular Piper Cherokee, that crowd the skies around major airports.

The best airborne warning system is still a pilot looking out the window, but many of them have less flight time than in the past. Fewer are coming from the military services, the traditional source, because the services are training fewer pilots and trying harder to keep the ones they have. Consequently the percentage of hires with less than 2,000 hours of flight time rose to 14% last year from 2% in 1983. Experience pays: The 59-year-old pilot of the United 747 that lost a cargo door stabilized the crippled plane with unorthodox maneuvers; the ones in the flight manual would have caused a crash. Claude Pepper, hear this: The hero was a month from the FAA's mandatory retirement age.

Air controllers looking at their radar screens are the major ground-based collision system, and they too are lagging in experience. The controller force never recovered fully from the devastating 1981 Patco strike; it may have been a bit fat and obstreperous, but it now limps along with 10,000 senior controllers, 1,000 fewer than before President Reagan sacked the strikers.

But the accident that seized the world's attention was the one that dramatized the growing problem of aging planes. Says John Goglia, a lead mechanic for USAir and an official of his mechanics' union local: "Aloha wasn't a slap in the face for the industry, it was a punch in the stomach." While the National Transportation Safety Board has disclosed preliminary assessments of the Aloha accident, it hasn't announced the official cause. Investigators immediately focused on the plane's age—19 years. Every subsequent incident has triggered ritual questions about aging aircraft. Initial news reports of the United cargo-door accident last February made a point of the plane's age, also 19 years, but investigators now suspect a faulty door latch. The FAA had ordered airlines to inspect the latches and reinforce them. United did so but skipped a mandatory reinspection because of a clerical error.

In the Aloha case as well, the critical factors may have been maintenance and inspection. Inspection ranges from quick, daily "walk-arounds" to "A" checks lasting several hours all the way up to "D." That one can take several weeks and usually requires stripping much of the cabin interior down to the fuselage skin. The Aloha plane was a Boeing 737, the world bestseller and the workhorse of the jet age. Its skin is a strong aluminum sheet only one thirty-second of an inch thick. Inspectors need to scrutinize less than 5% of its 6,500-square-foot surface—essentially at lap joints, where thousands of rivets join two layers of aluminum to one of the ribs that form the plane's skeleton.

MAINTENANCE and inspection focus mainly on moving parts—the hydraulic cables that help maneuver the plane, the landing gear, and, above all, the more than 30,000 whirling, vibrating components of each engine. The plane itself is a moving part, resembling a continually inflating and deflating balloon when it is pressurized so passengers can breathe normally at cruising altitudes. The more flights, and thus the more pressurization cycles, the more often the fuselage stretches, widening the microscopic cracks that occur when aluminum is bent to cover the plane. Because skies are crowded, planes fly at ever higher altitudes, requiring greater pressurization.

The Aloha plane was not just old but also overworked. Used on Aloha's short, puddle-jumping routes connecting the Hawaiian islands, it had made 89,680 flights, a figure nearly 20% more than Boeing's "design objective" of 75,000. Design objectives are milestones measured in years, flights, and hours aloft—beyond which airlines may find maintenance so expensive that they should consider replacing the plane. Boeing says these objectives have nothing to do with safety but acknowledges that a survey of its aircraft found "some fatigue" in planes that had exceeded the recommended number of flights.

Aloha's aircraft operate in salty, corrosive tropical conditions. Corrosion and metal fatigue can make deadly partners, especially in the thin skin of an airplane. Serious metal fatigue is relatively rare, but worsens with the number of flights. Corro-

THE FIVE FACTORS THAT MAKE FOR AIRLINE ACCIDENTS

On the whole, planes don't kill people, people do. Most collisions, crashes, and other mishaps result from human error—or perversity. Weather and structural failure cause only 15%.

CAUSE OF ACCIDENT	FREQUENCY % of fatal accidents	RECENT EXAMPLE
Human error Pilots, air controllers, other flight crew members	67%	**Collision of Pan Am and KLM 747s at Tenerife, Canary Islands, March 27, 1977; 582 killed**
Weather Thunder and lightning, ice, fog, wind shear	12%	**Crash of Delta Air Lines L-1011 from wind shear at Dallas–Fort Worth, August 2, 1985; 133 killed**
Sabotage and military action	11%	**Bombing of Pan Am 747 over Scotland, December 21, 1988; 270 killed, including 11 on the ground**
Maintenance	7%	**Crash of Japan Air Lines 747 on Mount Ogura, August 12, 1985; 520 killed**
Structural failure	3%	**Damage to Aloha Airlines 737 over Pacific, April 28, 1988; 1 killed**

SOURCE: INTERCONTINENTAL AVIATION SAFETY CONSULTANTS

REPORTER ASSOCIATE *Charles A. Riley II*

sion can spread quickly with neglect and accounts for about 80% of maintenance problems. Boeing built the Aloha jet and 290 others using a process called cold bonding, which was later dropped because the joints were found susceptible to corrosion. For many years Boeing had advised all of its customers, including Aloha, on ways to counteract the problem.

Aloha's maintenance crews worked hard. Traffic was booming, and the company had only ten planes, so if one was down for heavy maintenance and inspection, 10% of its capacity was out of service. Unlike the rest of the industry, which usually has about 27 maintenance people per plane, Aloha had only 17. The FAA allows carriers to tailor their maintenance and inspection programs to their own needs, but John Galipault, president of the Aviation Safety Institute, a private industry research group, says standards are too lax. The agency allowed Aloha to conduct the rigorous "D" check in 52 small segments over a period as long as eight years; that inspection is normally performed in four segments over four years. An Aloha plane could thus lose little time in the air, but the company had no clear idea of its overall condition.

WHILE HE DENIES that Aloha skimped on maintenance, Thomas Derieg, the carrier's senior vice president for operations, acknowledges that "what happened in Hawaii was a microcosm of what happened on the mainland" following deregulation. In this case a newcomer, Mid Pacific Airlines, challenged the established carriers, Aloha and Hawaiian Airlines. "We were caught short for a little bit," Derieg says, "so we had to reduce costs and realign our operations."

Aloha's fleet age averaged about 15 years at the time of the accident, and it is not an isolated case. The average fleet age of the nine major U.S. carriers ranges from 8.5 years for Delta to 14.5 for Northwest. Says Ben Cosgrove, a Boeing vice president who heads the company's aging-fleet evaluation program: "With a fleet this large and this old, we're entering an era that nobody's entered before."

Because Boeing, McDonnell Douglas, and Airbus are booked with orders until the mid-1990s, airlines have turned to lessors and used-plane brokers. Ireland's Guinness Peat Aviation, the world's largest lessor, recently placed the biggest order in aviation history—$17 billion for 308 planes from all three major manufacturers. GPA has turned leasing into a blue-chip business, but the used-aircraft market is a dangerous place. "We buy and sell a lot of damaged planes," says S. Ross Lipscomb, president of Aircraft Sales Co., a dealer in Springfield, Virginia. "We turned one over that had bellied in down in Mexico. We jacked her up and sold it to Northeast Airlines, and they sold it to a European airline, and it's still in passenger service." He won't name the current owner.

All these trends argue for strict maintenance standards. A Boeing task force recently recommended an $800 million modification or replacement program for more than 1,300 early models of its 727, 737, and 747 jets. At a cost per plane of about $600,000, the program consolidates work covered by 150 repair bulletins on such things as lap joints, where pieces of aluminum skin could attract moisture and corrode. Like the approach routinely used for engine parts, the program also calls for many repairs or replacements to be made at milestones in the aircraft's life, such as the design objective for the number of flights.

The FAA is stepping up its scrutiny of operators, but the agency's own problems —a shortage of experienced inspectors, as

THE HARD ROAD TO AIRPORT SECURITY

ED WILCOX—PICTURE GROUP

A sniffer whiffs a bag for explosives.

Don't look for real improvements in airport security overnight. The FAA has issued tough new regulations that restrict access to aircraft and maintenance areas and tighten procedures for screening passengers and baggage. Sounds good, but the access rules won't take full effect until 1992. High-tech help for detecting explosives is on the way too—but the machines are expensive, and plenty of kinks remain to be worked out.

The leading piece of technology is a baggage-inspection system called Thermal Neutron Activation, which uses low-level radiation to spot explosives. It had an impressive 95% success rate in recent trials at Los Angeles and San Francisco airports. But TNA is expensive (about $1 million per machine) and slow (six seconds per bag). The first unit is scheduled to go to work at New York City's JFK in June, but by next year only six major U.S. airports will have it.

You can't screen passengers with TNA, so the FAA is sponsoring research on a new generation of so-called vapor sniffers. Sensitive to nitrogen and oxygen, key ingredients of most explosives, they can be deployed at the gate, on board, and even at the air-conditioning exhaust vent just before takeoff. Unfortunately, sniffers too are far from general use.

In the meantime, inspectors will rely on matching bags with passengers, along with improved X-ray units that are twice as costly as existing $35,000 machines. The kind of interrogation and manual baggage search that the Israelis use to good effect is fine if you have only El Al's 21 planes to worry about. But it's uneconomic for large U.S. carriers.

Airline and airport officials sometimes seem more worked up about the FAA than about the PLO. They are furious because no federal funds have been earmarked to help them build the required new gates and perimeters. To arrive at its cost estimate of $170 million for the nation's 270 major airports, the FAA figured that the average number of access points to be secured would be 128. Officials at Chicago's O'Hare stopped counting at 1,627 and never even made it to the cargo area. No wonder industry experts say the price will be more like $1.7 billion. **– Charles A. Riley II** well as outdated rules—hamper its effectiveness, at least for now. "We're just like cops," says Ray Ramakis, manager of the FAA's aircraft maintenance division. "We can't be there 24 hours a day. We have to depend on people to obey the law." The agency has about 1,000 inspectors; another 500 are to be hired by October 1990. That would merely restore the manning levels of 1983, when domestic air traffic was 40% lower. Airline mechanics deride the FAA's propensity to check maintenance paperwork rather than airplanes. In the Aloha case, the FAA never physically inspected the aircraft itself.

CONGRESS may pressure the FAA and the industry to do more. Senator Wendell Ford, the Kentucky Democrat who heads the aviation subcommittee, is considering legislation to require stricter maintenance and inspections. He is impressed by the way the military handles upkeep of aging aircraft, as well as its practice of simply retiring a plane at a certain age.

Both military and civilian inspectors have turned increasingly to high-tech solutions. So-called nondestructive testing, or NDT, finds hard-to-see flaws, some as tiny as a few millimeters. NDT uses powerful X-rays, but the shadows a crack casts in an X-ray image are often difficult to interpret. An eddy current test passes a magnetic field over the jet's skin; an alarm sounds or a light flashes when a surface crack interrupts the current flow. Similarly, ultrasound uses disruptions in high-frequency signals to find deeply embedded cracks.

All these methods, however, depend on an easily bored human being. To combat wandering attention, the U.S. Air Force uses automated NDT on some of its high-performance aircraft. At a base near Sacramento, California, the Air Force Logistics Command deploys a giant automated neutron radiography machine to hunt down corrosion on F-111 fighter-bombers. By bombarding the 73-foot-long aircraft with neutron radiation, the machine can detect traces of water as small as *molecules* that could corrode metal. The N-ray machine does in 16 hours what human inspectors would need a month to do. The Air Force device, however, costs $14 million. Civilian airline operators snort that the military couldn't compete in a deregulated environment. Nevertheless, the industry may have to learn to adapt the technology, and large-scale production is sure to reduce costs.

Are there fresh ways to approach the human side of inspection and maintenance? Maybe. Japan Air Lines suffered the worst air accident in history in 1985, when a Boeing 747 slammed into a mountain and killed 520 people. Seven years earlier Boeing engineers had improperly repaired the pressure bulkhead at the rear of the passenger cabin. JAL inspectors failed to find the defect—a missing line of rivets—in five heavy inspections.

Before the 1985 crash, JAL's maintenance teams looked after jets the way American mechanics do, seeing dozens of planes in the course of a year. Since then the company has assigned its work teams to specific aircraft. Today a typical 15-man team of mechanics and engineers at Haneda airport near Tokyo oversees a 747 and a DC-10. The team members sign their names on a special plaque inside the passenger cabin. After a major repair, the team leader is expected to fly on the plane.

By bombarding the aircraft with neutron radiation, the machine can detect traces of water as small as *molecules* that could corrode metal.

Satoru Totoki, JAL managing director and senior vice president, compares the system to using a family doctor instead of a clinic. He points out that in English the teams are called "dedicated maintenance crews," in the sense of being assigned to specific planes. But in Japanese, they are called *kizuki*, or "plane crazy." One August day in 1986, a JAL plane was laid over in Thailand with engine trouble. JAL's Bangkok maintenance staff took care of the problem without informing the team leader in Tokyo about "his" plane. The leader, on vacation that day, somehow found out and got the next flight to Bangkok to verify that the repair had been done properly.

The *kizuki* approach is expensive. Government-owned for many years and only recently privatized, JAL has just 96 planes and lavishes 51 maintenance people—including specialists in hydraulics and electronics—on each one. That's almost double the number for a typical U.S. carrier.

Other airlines are trying to turn the aging plane problem to their marketing advantage. American, which has one of the youngest fleets (average age: 9.4 years), boasts that it will get even younger as big aircraft purchases are delivered over the next four years. United just placed a $16 billion order with Boeing. Even Aloha, having sold its two oldest planes for junk, trumpets that three recent acquisitions have rejuvenated its average fleet age to ten years. Safety, however, takes more than replacing aircraft. A brand-new jet, poorly maintained, can crash tomorrow. Think about that too the next time you settle in your seat and the plane door thumps shut behind you. **F**

Japan Air Lines crews watch over specific planes. These team members salute "their" 747.

ROBERT WALLIS—SIPA

OTHER VOICES

By Lester B. Korn

HOW THE NEXT CEO WILL BE DIFFERENT

Here's what today's top executives in 20 countries say tomorrow's leaders will be like. A headhunter tells how to develop them.

■ The bulk of major American corporations are failing in one of the most basic tasks—developing tomorrow's CEOs. They can't afford simply to clone today's leaders. They need radically different ones, and that requires radically new approaches to finding and developing them. At stake is nothing less than whether the most successful multinational companies will be based in America or whether foreign organizations, with stronger leaders, will be the powerhouses of the future.

CEOs themselves strongly support this view. To get a broad perspective on the changing requirements for successful business leadership in the next century, our executive search firm initiated a multilingual survey of 1,500 senior executives, 870 of them CEOs, in 20 countries. The study, covering Japan, Western Europe, Latin America, and the U.S., was conducted over the past year by the Columbia University graduate school of business. In an exhaustive eight-page questionnaire, those surveyed were asked to assess the dominant characteristics that describe today's CEO and that will describe the ideal CEO of the year 2000. They agreed that:

- Visionary leadership rather than managerial skills will be the most valued standard for tomorrow's top officer. Fully 98% of those responding to the survey ranked vision as a top characteristic of the future CEO, against only 75% who describe themselves or their current CEO as having that as a distinguishing trait. Rated considerably less important were such traditional management qualities as making the major decisions personally and stressing loyalty and length of service in rewarding employees.
- A "Copernican revolution" must take place in the attitudes of American CEOs as the international economy no longer revolves around the U.S., and the world market is shared by many strong players. One disquieting finding of the study: While U.S. executives have identified this change, they still place far less importance on having an international outlook than do the foreign executives surveyed. (See table, next page.)

WHAT TRAITS CEOs HAVE—AND WILL NEED

Percent describing traits or talents dominant now in the CEO and important for the CEO of 2000

PERSONAL BEHAVIOR	NOW	YEAR 2000
Conveys strong sense of vision	75%	98%
Links compensation to performance	66%	91%
Communicates frequently with employees	59%	89%
Emphasizes ethics	74%	85%
Plans for management succession	56%	85%
Communicates frequently with customers	41%	78%
Reassigns or terminates unsatisfactory employees	34%	71%
Rewards loyalty	48%	44%
Makes all major decisions	39%	21%
Behaves conservatively	32%	13%

KNOWLEDGE AND SKILLS	NOW	YEAR 2000
Strategy formulation	68%	78%
Human resource management	41%	53%
International economics and politics	10%	19%
Science and technology	11%	15%
Computer literacy	3%	7%
Marketing and sales	50%	48%
Negotiation	34%	24%
Accounting and finance	33%	24%
Handling media and public speaking	16%	13%
Production	21%	9%

Increasing in importance   Decreasing in importance

JOHN S. ABBOTT

Lester B. Korn, 53, is chairman of Korn/Ferry International, Los Angeles, and the author of *The Success Profile*, published this year.

- The need to communicate frequently with employees will rise dramatically. Only 59% cited this as an important characteristic of top management in 1988, but 89% believe it will be in the year 2000. One force for change: With more lines of business dispersed over wider geographic areas, the heads of multinational corporations will have to spend more time in consensus building to meet management objectives.

Other aspects of human resources management will also gain in importance. Just 58% consider management training and development "very important" for the CEO to promote; 85% say it will be by the turn of the century. Similarly, planning management succession is emphasized by only 56% today, while 85% say it must have high priority in the future.

LEE IACOCCA last year summed up the changes he sees coming in the auto business (FORTUNE, August 29): "If a guy wants to be a chief executive 25 or 50 years from now, he will have to be well rounded. There will be no more of 'Is he a good lawyer, is he a good marketing guy, is he a good finance guy?' His education and his experience will make him a total entrepreneur in a world that has really turned into one huge market . . . He'd better speak Japanese or German, he'd better understand the history of both of those countries and how they got where they are, and he'd better know their economics pretty cold."

Tomorrow's leader, in his late 30s or early 40s, very likely is today at the company he or she will direct. He has already taken on risky high-profile assignments where one person can make a difference and earn rewards early in his career. More likely than not, he has worked overseas and been given profit responsibility. He understands the needs and markets of developing nations, has a broad view of world politics, may be fluent in at least one other language, and can bridge cultural gaps. In short, this executive is an entrepreneur in a corporate environment.

The responsibility for identifying, preparing, and retaining these individuals rests with their employers and, in particular, with today's CEOs. Here's what current top management must do:

■ **Broaden the field.** Just as a mining company prospects for gold or bauxite to the far reaches of the globe, major corporations must scour the world—not just their home country—for talent. Foreign nationals must have as much of a shot at the top as domestic talent. Corporations must look deeper into the organization for prospects.

Women and minorities will play a much greater role in senior management both because they deserve to and because if they don't, companies won't have enough talent to go around. Other Korn/Ferry surveys suggest that in the case of women, the movement from middle to upper management remains constrained by more than a shortage of talent. Traditional male resistance toward women as bosses still exists. That and any other form of discrimination must change quickly.

■ **Give people priority.** The human resource function can't continue to be relegated to the position of management stepchild, rising to the attention of the board of directors and the CEO only when a major vacancy occurs. Management development planning must be elevated to a priority at least equal to that of the corporate acquisitions team and other profit-generating operations.

> **Career paths may look like a game of Chinese checkers, managers zigzagging rapidly, always to more responsible positions.**

Companies should inaugurate a high-level human resource program that melds with their strategic long-range plan. Reporting directly to the CEO, leaders of the program would develop a systematic process for identifying, training, and motivating peak performers.

■ **Get them ready.** These talented managers form a substratum to mine for future corporate leadership. They should be given tough assignments involving profit responsibility and be rotated to posts with additional responsibility as rapidly as appropriate. When they stumble, they should be evaluated in a way that shows them how to succeed, rather than be shoved off the list of hot prospects. They should be moved strategically within the organization to provide breadth of experience and a well-rounded perspective. An international assignment is important, as is a leave to serve a short stint in government. The political role of the CEO in the next decade will be substantial: He must deal with multinational joint ventures and face the broad social and economic implications of his own decisions.

Companies should establish rotating seats for younger managers on long-range planning committees. Such a step offers the twin advantages of infusing fresh blood into the planning process and giving this talent a larger window on the corporate world. It will help prospective leaders to acquire a strong sense of vision and a perspective on the corporation's evolution.

Also essential is specialized training in communications, team building, languages, technology, networking, cultural awareness—in addition to management techniques. While traditional skills will continue to be important, 21st-century managers cannot simply be masters of the balance sheet.

Astute direction of management training and development takes on added significance as the corporate ladder splinters and traditional routes to the top disappear. Economic forces have compelled changes in the modern corporate structure, which is no longer a pyramid, but a flatter, leaner, more geographically dispersed entity. Senior management can't afford to routinely promote "safe" executives on the traditional step-by-step path. Career paths may look like a game of Chinese checkers, managers zigzagging rapidly, always to more responsible positions.

■ **Keep them aboard.** A golden handcuffs program for these managers will be vital if corporations want to protect their investment. Otherwise, as competition among companies intensifies, executives will be picked off more often. Current CEOs must rekindle some of the emotional ties that used to hold the best people before the wave of takeovers and restructurings made it evident that middle managers are expendable, regardless of performance. Doing this requires top officers to demonstrate clearly that they care about individuals and their career paths. No compensation package should be structured as an automatic security blanket, but long-term incentive plans must be designed so that it is costly for the individual to leave and give up future rewards.

A rigorous evaluation should be held annually, tracking this pool of promising executives closely. The program must accommodate change and the constant influx of new members.

CONTRASTING VIEWS

Percent of U.S. and foreign executives describing an attribute as "very important for the CEO of tomorrow"

VALUED MANAGEMENT PRACTICES	U.S.	FOREIGN
Emphasizes international outlook	62%	82%
Experienced outside home country	35%	70%
Trained in foreign language	19%	64%
Personally makes all major decisions	17%	26%
Emphasizes ethics	93%	77%

■ **Expand the role of the board.** Companies should bring promising managers before the directors—possibly assigning them as staff to board committees—rather than limit the board's contact to a few familiar faces. Directors must become more aware of their responsibility to provide oversight in the management development process as part of helping their companies adjust to changing world conditions. That means assuming an activist stance rather than just reacting to management initiatives. At the very least, board members can provide an objective perspective in a process often bogged down in politics and outdated loyalties. An old-fashioned, slow-moving executive development program is still in place in far too many corporations.

CEOs typically prefer not to face the issue of replacing themselves, pointing as it does to their own mortality. But management succession—identifying the top candidates and arranging for a smooth transition—must be part of any human resource effort aimed at shaping new generations of leadership. A board committee established to confront the problems of succession can provide a long-range perspective in human resource development. The succession plan should include the top ten to 15 positions in the company.

Outside directors can see much more clearly than CEOs their responsibilities in this area. A recent study conducted by Korn/Ferry reveals a vast difference between the views of outside and inside directors: 81% of the outsiders surveyed ranked management succession as their No. 1 priority, while only 36% of the board chairmen—most of whom are insiders—put it among their top *three* issues.

CORPORATIONS will need to tap an enormous wealth of talent to compete successfully in international arenas. Yet many companies have failed to face the fact that the pool of managers truly capable of running global businesses is relatively small. This scarcity is made acute by the demographic shifts of a maturing population. The shrinking number of future managers will greatly affect salaries, workplace organization, and the development of human resources. Relying on the cream to rise automatically to the top, as we have in the past, is too great a gamble.

TUSCALOOSA

How Do Our Workers Compare With Japan's? First Of All, They're Always Breaking Things.

Even during startup, workers at JVC's U.S. plant in Tuscaloosa were breaking records.

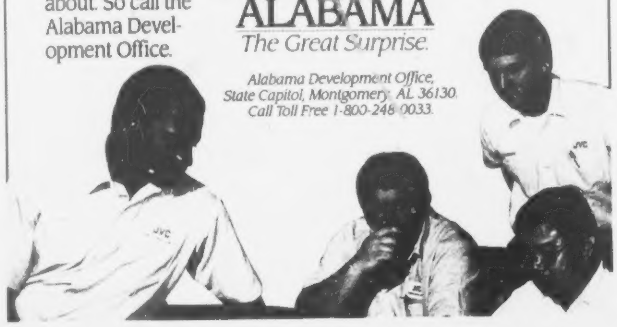
"Without a doubt, the Americans in Tuscaloosa are as productive as our workers in Japan," says Ken Awakura, executive vice president. "In fact, one Tuscaloosa division established two consecutive worldwide JVC production-achievement records set at more-established sister factories in Europe and Japan."

Three companies in Pennsylvania also have located high-technology, state-of-the-art plants here.

They all had good reasons, which you should know about. So call the Alabama Development Office.

ALABAMA
The Great Surprise.

Alabama Development Office,
State Capitol, Montgomery, AL 36130.
Call Toll Free 1-800-248-0033.



NEARLY HALF
OF ALL BLINDNESS

For the sake of your own eyes, and your children's eyes, get a checkup from an eye care professional. And send the coupon below or call us for free educational brochures.

PLEASE SEND THE FOLLOWING BROCHURES:

☐ Your Child's Sight
☐ Pre-Schooler Eye Safety
☐ Games and Eye Safety
☐ Signs of Eye Trouble in Children
☐ Lazy Eye in Children
☐ Crossed-Eye Problems
☐ Family Home Eye Test
☐ Cataracts
☐ Glaucoma
☐ Age-Related Eye Disorders

NAME ____________
STREET ADDRESS ____________
CITY ____________ STATE ____ ZIP ______

MAIL TO National Society to Prevent Blindness
500 East Remington Rd.
Schaumburg, Illinois 60173
Or call 1-800-221-3004.

PREVENT BLINDNESS

tems. This kind of cooperation, creative thinking, and carefully crafted legislative solution will leverage "infrastretching" efforts into viable long-term solutions to our pressing needs.

PETER J. SCHMITT
Executive Vice President
Financial Guaranty Insurance Co.
New York City

YUPPIES ASHORE!

I was delighted to read in "Yuppie Spending Gets Serious" (March 27) that the yuppies are giving up on sailing. Thank God! Last summer they jammed every street, cruising anchorage, racecourse, and stool in worthwhile sailors' watering holes from Marblehead to Newport to Annapolis. This winter they so crowded the schedule of charter yacht brokers in the Caribbean that a proper yachtsman could hardly find a free boat. Worse, they've copied our clothes and drunk our choice to the point that you can't tell them from us.

DONALD A. MACAULAY
Marblehead, Massachusetts

FAST CAR, BACKWARD HORSE

In "Luxury Cars: New Leaders in an Upscale Upheaval" (April 10) the caption should read: "Below, the famous Ferrari prancing horse—backwards."

I fear someone in your art department flipped the negative on this photograph. The Ferrari trademark is always prancing to the left.

JAMES A. KENTON
Missouri City, Texas

He's right, and the Ferrari in "A Portfolio of Blue-Chip Cars" is a GTB, not a GTS.

BE THANKFUL THE PHONE RINGS

Concerning Other Voices (April 24), John Graham may have a point. However, I believe that he probably wouldn't return a call from his wife.

Graham should be thankful that he has been successful enough to receive such calls from brokerage trainees. Where was he when he got started 35 years ago?

By making cold calls, some of us provide for our families so that they may grow up to make the "Elite Called List."

PHILLIP J. BOOTH
Account Executive, PML Securities
Louisville, Kentucky

CORRECTION

In the FORTUNE *500 (April 24): Interco's (No. 133) total return to investors for 1988 should be 149.2%, rank 4; 1978-88 should be 21.5%, rank 97. USG's (No. 152) total return to investors for 1988 should be 31.3%, rank 110; 1978-88 should be 25.1%, rank 67. Gillette's (No. 128) annual growth for earnings per share 1978-88 should be 12.1%. The Savannah Foods & Industries (No. 347) earnings-per-share change from 1987 should be 41.5%; 1978-88 growth rate should be 15.7%, rank 66. Hudson Foods, Rogers, Arkansas, was omitted and should have ranked No. 473 in sales.* F

Address letters to FORTUNE, Time & Life Building, Rockefeller Center, New York, N.Y. 10020. Letters may be edited for purposes of clarity or space.

Made for each other.

The ladies and gentlemen on the left have always been determined to achieve success. The ladies and gentlemen on the right feel the same way. In fact, they have more in common than you might think. Both groups called Summer Jobs '89. One with summer jobs to fill. One with the skills and desire to fill them. A successful outcome all around.

Summer Jobs '89 · Start a success story · (212) 888-JOBS

Sponsored by the New York City Partnership, Inc.

6/5/89 C8900-1

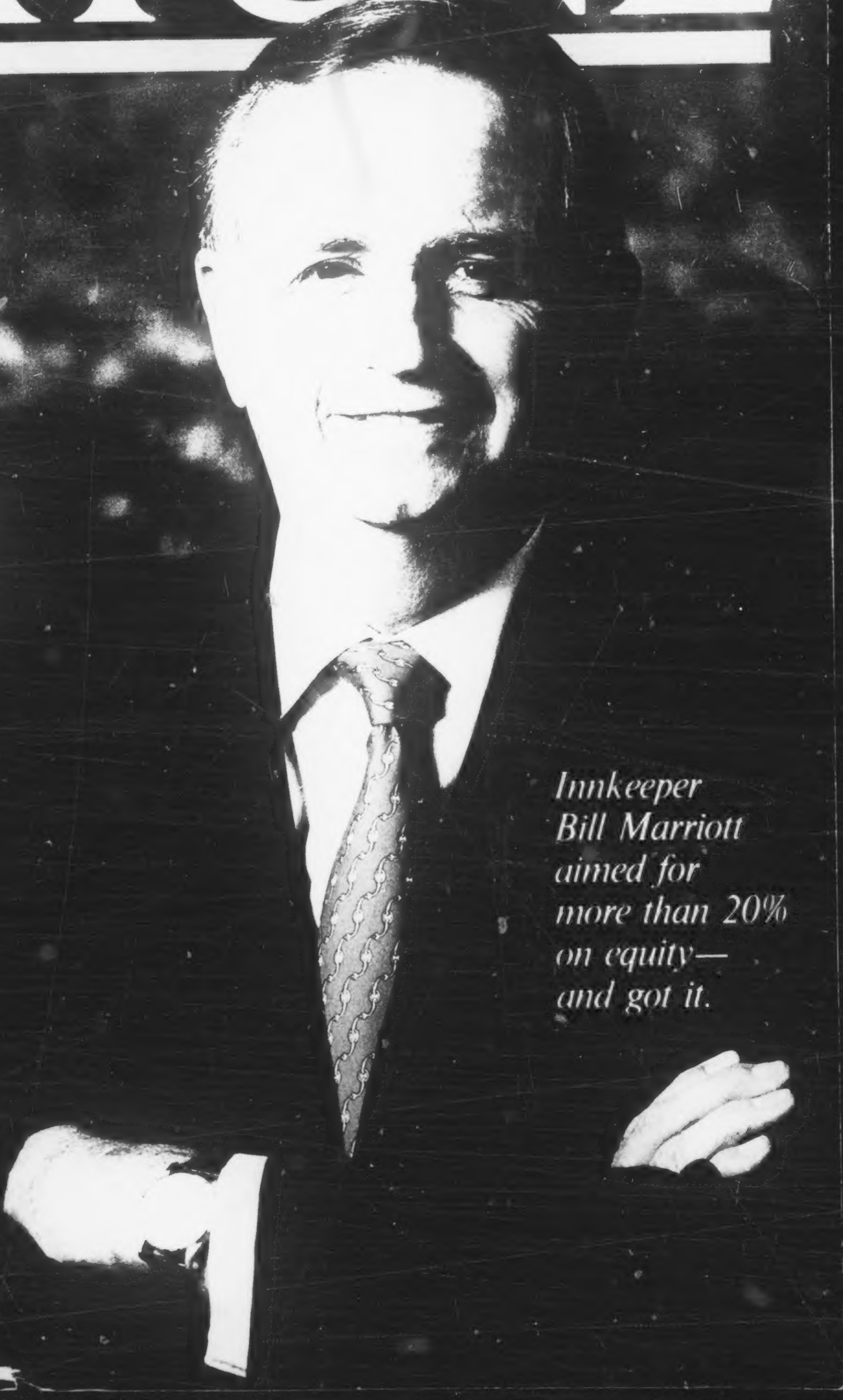
JUNE 5, 1989

$3.50

FORTUNE

STARS OF THE SERVICE 500

FROM OUR ANNUAL LIST:
How a Select Few Earn Great Returns Year After Year



Innkeeper Bill Marriott aimed for more than 20% on equity—and got it.

500

JUNE [illegible]

VOLUME 119, NO. 12

FORTUNE

Riding a service boom: Ovak Arslanian photographed this Atlanta rail yard.

COVER: Katherine Lambert caught Marriott at the Camelback Inn in Scottsdale.

SERVICE 500/COVER STORIES

STARS OF THE SERVICE 500 54

Strict attention to costs and a passion for satisfying customers are the secrets of nine standout performers. Measured over a decade, these companies have averaged more than a 20% return on shareholders' equity. Their techniques and philosophies for achieving success hold lessons for business. *by Carol J. Loomis*

BILL MARRIOTT PROPHESIED PROFIT AND PROSPERED 56

AMERICA STILL REIGNS IN SERVICES 64

Japanese banks, British builders, and many other foreign companies are challenging their Yankee counterparts—often on U.S. turf. But don't count the Americans out: In brainpower-driven businesses they sell lots more to the world than the U.S. buys. And with a work force that outproduces the Japanese in transportation, communications, and retailing, the U.S. sets the standard for efficiency in serving customers. *by Sylvia Nasar*

"Why is the promised gold so dirt cheap today? Because it *is* dirt."

PAGE 16

"He's friendly and pumped up, and that's why he's got great occupancy rates."

PAGE 56

"I have a private conviction that CEOs are paid too much."

PAGE 109

"The Saatchis were great to work for, but I was always going to be a junior partner there."

PAGE 131

"Shopping malls are our laboratory, where we do our research and development."

PAGE 145

"Wonderful things don't get accomplished with too much conflict."

PAGE 161

INVESTING

THE RICHEST LITTLE CLUB IN THE WORLD 73

AEA Investors is no ordinary outfit. Its shareholders—many present or former CEOs—make a return of 45% a year. *by Christopher Knowlton*

COMPENSATION

SEEKING THE SENSE IN CEO PAY 88

Sometimes there isn't much. A compensation expert shows what does and doesn't influence the take at the top. *by Gra[illegible]. Crystal*

CEO POLL: SO WHAT *IS* THE BEST WAY TO PAY? 109

ENERGY

GET READY FOR POWER BROWNOUTS 116

You may be shocked by electricity shortages this summer. Demand is up and utilities aren't building enough capacity. *by Peter Nulty*

FUSION'S FUTURE: IT AIN'T DEAD YET 125

Despite problems, the dream of cheap power could someday come true. *by Gene Bylinsky*

SELLING

CONFESSIONS OF AN ADVERTISING MAN 131

Martin Sorrell is after Ogilvy on the way to becoming "*the* major multinational marketing services company." *by Richard I. Kirkland Jr.*

DIET CENTERS ARE REALLY IN FAT CITY 137

Baby-boomers are plunking down $500 to $900 to get others to help them do what they haven't been able to do themselves. *by Brian O'Reilly*

CORPORATE PERFORMANCE

WOOLWORTH TO RULE THE MALLS 145

A retail relic has evolved into a hot specialty merchant, with 40 different brands of stores. Expect five or ten of them to show up in your local shopping center soon. *by Bill Saporito*

THE OTHER DISNEY IN THE SPOTLIGHT 161

At the studio he was the "idiot nephew." On Wall Street he's now "Roy the Raider." He doesn't like either handle. *by Faye Rice*

COMPANIES TO WATCH 173

SPECIAL REPORT

THE SERVICE 500

Stories and indexes start on page 351

■ AT LAST, PROFITS WORTH SAVORING 352

A rebound by banks sparked a stunning performance by America's biggest service companies—the FORTUNE Service 500.
by Alan Deutschman and Karen Nickel

■ THE 500 LARGEST SERVICE CORPORATIONS 358

■ DEFINITIONS AND EXPLANATIONS 388

■ INDUSTRY MEDIANS 388

■ ARRIVALS, DEPARTURES, AND MONEY LOSERS 389

■ ALPHABETICAL INDEX 390

Contents continued on page 5

"Don't rely on your brand name."

PAGE 173

"The big question new employees will be asking is 'Am I going to progress quickly?' And the answer is 'No.' "

PAGE 199

"Manufacturing is more than just driving in a screw again and again."

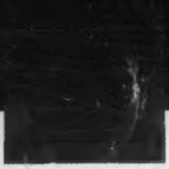
PAGE 245

"We don't need an external shock to destabilize this young, fragile democracy."

PAGE 263

"We're one of the poor boys in the league. We have to be smarter and wilier."

PAGE 319



"If I had to bet, I'd place the family assets on China."

PAGE 323

MONEY & MARKETS

DOES DEREGULATION MAKE SENSE? 181

Freeing banks, brokers, and thrifts to compete was supposed to help consumers. What followed was the S&L debacle. Has anybody gained—and what's next? *by John J. Curran*

CAREERS

THE UNCOMMITTED CLASS OF 1989 199

What this year's college grads want isn't permanence. Loyalty to their employers is neither offered nor expected. *by Terence P. Paré*

COMPETITION

CAN CONSORTIUMS DEFEAT JAPAN? 245

High-tech cooperation can work—with the right leadership, well-defined goals, and money. Sematech looks good, HDTV doesn't. *by Lee Smith*

EUROPE GOES WILD FOR YANKEE PCs 257

Getting ready for 1992, business is on a computer-buying binge. One supplier had to charter cargo jets to keep up. *by Richard I. Kirkland Jr.*

TRADE

PERILS OF GETTING TOUGH ON KOREA 263

With Washington threatening retaliation, the Koreans are talking up what they've already done to open markets. *by Ford S. Worthy*

THE SOCIETY

CAN YOUR KID BECOME PRESIDENT? 271

Arguments that America is growing more elitist don't wash. The country welcomes ability more than ever. *by Myron Magnet*

DEPARTMENTS

EDITOR'S DESK 6

INDEX 9

NEWS/TRENDS 16

Wall Street likes the steel contract, the latest gold scams, games on the job, a bridge match, a steal in Colorado real estate, and more.

FORTUNE FORECAST 37

Service companies supply the steam as business spending rises. *by Maureen F. Allyn*

PERSONAL INVESTING 41

Stocks of some service companies may keep outpacing the industrials. *by Andrew Evan Serwer*

Also: A homebuilder with a backlog, some equity funds reopen, and Portfolio Talk with William E. Donoghue of the Donoghue Organization.

FORTUNE PEOPLE 319

Saul Steinberg's son talks empire, the President's son talks baseball, and more. *by Mark Alpert*

ON THE RISE 320

OTHER VOICES 323

Lester Thurow defends China's economic moves and calls student riots a sign of success.

BOOKS & IDEAS 329

Two economists argue that you should feel good about the federal deficit. *by Todd May Jr.*

The truth about trade. *by David R. Henderson*

LETTERS TO FORTUNE 333

The oil spill, the MBA myth, feminism, cold-call cowboys, a voice from GE's past, and more.

KEEPING UP 339

Bimboism and the High Court, Russians and welfare, and much more. *by Daniel Seligman*

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, John J. Curran, Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Alan Farnham, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, CA), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Bill Saporito, Lenore Schiff, Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo), Richard S. Teitelbaum
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Todd James, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Karen Andrews, Charles J. Attardi, Leslie Brenner, Jonathan Brown, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

HOWARD EARL SIMMONS

Deutschman, Nickel, and editor Faltermayer

JAPANESE buying AIG insurance; Cubans getting overnight mail by UPS; children in Kuala Lumpur dragging their parents to the local Toys "R" Us. These scenes illustrate a truth richly documented by FORTUNE's 34th ranking of the largest service corporations: The U.S. leads the world in providing the services consumers most want to buy. Excluding life insurers, whose figures are not comparable with other companies', the Service 500 earned record profits in 1988 of $73.8 billion, up 55% from the year before. And, in a special study of CEO pay reported elsewhere in this issue, seven of the top ten U.S. chief executives listed head service companies (see page 88).

ANDY FREEBERG

Carol Loomis

But how long can the U.S. keep its lead? And what distinguishes service competitors who shine from those who just get by? In FORTUNE's lead article, writer Carol Loomis uncovers the secrets of nine superstars of service. In hotelier Bill Marriott Jr., for instance, she finds a leader so in tune with his customers' taste that he pounces on pastries insufficiently glazed. Writer Sylvia Nasar, in another story, says U.S. companies must improve already-high standards of efficiency if they are to keep their service edge abroad.

To improve FORTUNE's own high standards, we are again introducing new features to this year's list to make it more useful. Companies are now ranked by market value, as well as by many other methods. Editor Edmund Faltermayer, who oversaw the list and the package of stories that begins on page 54, notes that this year's Service issue is the largest ever and that it now rivals the Industrial 500 issue in size. Says he: "That tells you a bit about the growing interest in this list."

Compiling the rankings and writing the story analyzing them was the job of reporters Karen Nickel and Alan Deutschman, whom Faltermayer calls "the real stars of this issue." No one who has not spent three months in a windowless office poring over 13,500 numbers can imagine the concentration their task demanded. Deutschman literally had to get new glasses.

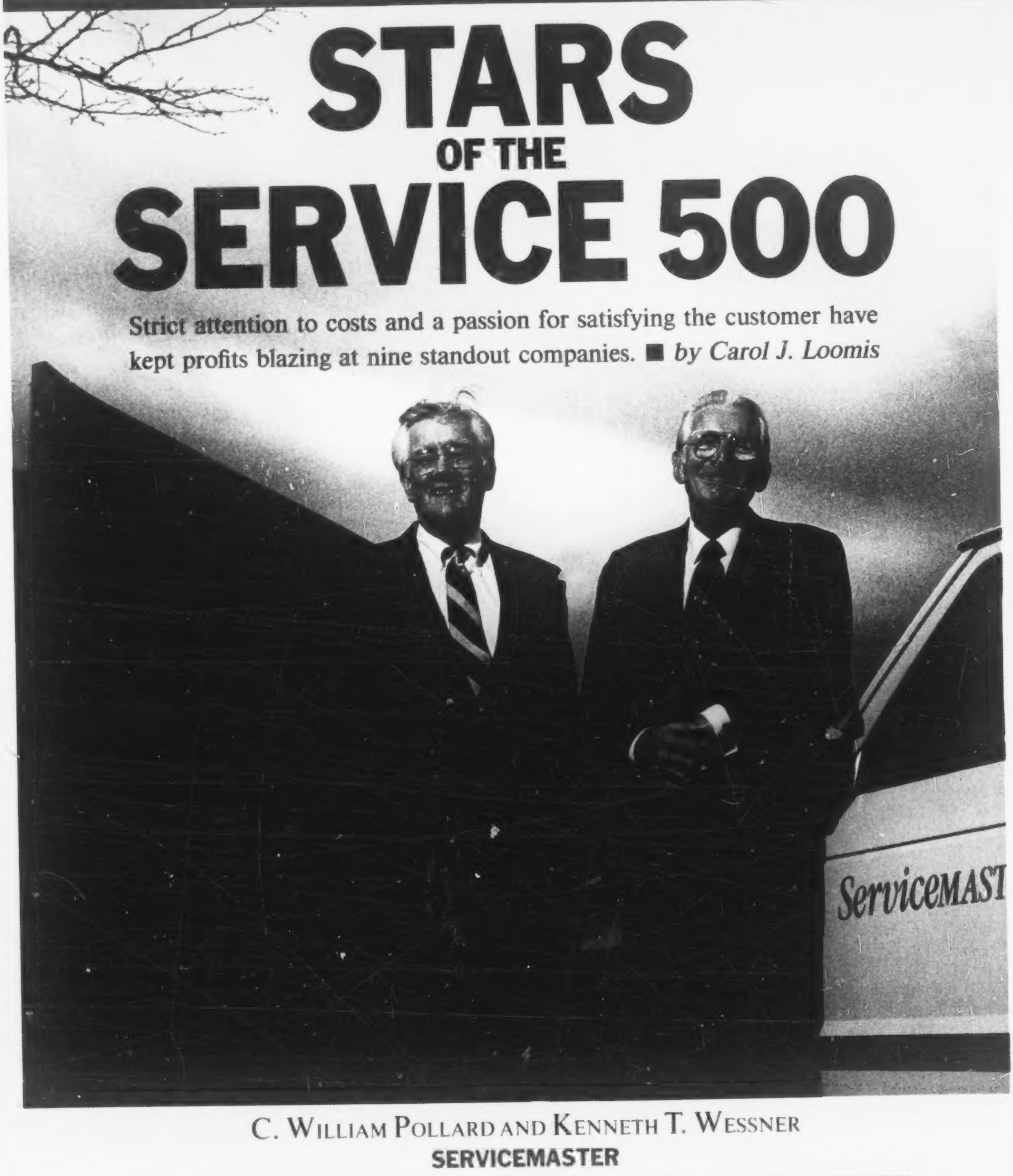
I'm delighted to tell you that FORTUNE, winner of last year's National Magazine Award for General Excellence, has brought home new awards. Carol Loomis won two: the Gerald Loeb Award, for her story on Kohlberg Kravis Roberts in our issue of last July 4, and the New York State Society of CPAs' Award for Excellence in Financial Reporting, for her story "The Killer Cost Stalking Business" in our February 27 issue. This Loeb (no kin) was Loomis's second. And writer John Curran won a first prize in the Overseas Press Club competition for his April 11, 1988, story "Tokyo's Stock Market: Stronger Than You Think."

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President; Michael J. Klingensmith, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, Fla. 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-541-1000. © 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company.

STARS OF THE SERVICE 500

Strict attention to costs and a passion for satisfying the customer have kept profits blazing at nine standout companies. ■ *by Carol J. Loomis*



C. WILLIAM POLLARD AND KENNETH T. WESSNER

SERVICEMASTER

■ *When their core business of hospital housekeeping weakened, President Pollard, 51 (left), and Chairman Wessner, 67, converted ServiceMaster to a partnership, borrowed, diversified, and kept it Star No. 1.*

TOM E. SMITH
FOOD LION

■ *By asking "How can we do the job better for less money?" President Smith, 47, has kept growth roaring at this supermarket chain.*

THE SERVICE sector of U.S. business displays bold paradoxes. It is the engine powering growth in the economy, yet ofttimes it is a wheezer in delivering profits. It is a world of ferocious rivalry in which competitive advantages can disappear overnight. But it is also a world in which innovative and flexible companies can outshine the field for years.

FORTUNE here presents the brightest stars of the service sector, including that standout whose CEO is on the cover, Marriott (see box, page 56). The nine winners were identified by a special FORTUNE study of sustained profitability in the Service 500. The nine form, you might say, an all-star baseball team made up of home-run sluggers and line-drive dependables, and a few slated to make the Cooperstown of investing. These are the boys not only of a summer but of a decade. In their techniques and philosophies lie broad lessons for business.

We lined up this team by looking at return on equity—the ratio, that is, of after-tax profit to stockholders' equity—the ultimate measure of how well a management is using the owners' money. To be a star, a company had to average at least a 20% return on year-end equity over the 1979-88 decade without once slipping below 15%. Companies that met these standards only through nonrecurring gains made on sales of assets did not qualify.

Each winner is a true business phenomenon. A company scoring 20% returns on equity year after year is offering an investor an exotic 20% savings account. Part of the investor's return is delivered to him through dividends; the remainder stays in the company as retained earnings, there again to earn 20%. As financial deals go, this one is hard to beat.

But such deals are also hard to find. Five years ago, when FORTUNE conducted a similar study for the decade 1974-83, we turned up only a dozen winners. Of these, just three repeated on this year's list of stars. Four dropped off because they were acquired or went private, and five couldn't maintain the high batting average required.

The new superachievers, three repeaters and six newcomers, share some ideas that may help explain their mutual success. Most are imbued with the belief that profits come from providing genuine value. To that end, they hold prices down by keeping costs and systems under rigid control. There are, in fact, cost fanatics on the team.

The shiningest star of the group is also somewhat unorthodox. ServiceMaster, of suburban Chicago, headed the 1984 list and leads the 1989 version as well with an average return on equity for the decade of—wow!—63.7%. Back-to-back championships may attest, in this case, to the power of religion. The company selects a biblical verse for each annual report and reiterates there the company's first objective: "To honor God in all we do." The name ServiceMaster connotes "master of service" as well as "service to the Master."

But the Lord helps those who help themselves. In the name of making money, ServiceMaster experienced a stunning secular conversion between List 1 and List 2. Five years ago the company was a garden-variety corporation that garnered 80% of its revenues from services, particularly cleaning, that it provided to hospitals. The company had no debt and required so little capital that it paid out more than 70% of its earnings in dividends. But as Medicare shrank what it would pay toward the bills of senior citizens, hospitals retrenched and ServiceMaster got squeezed.

So the company sallied forth and transformed itself. For one thing, it borrowed $340 million, mostly to buy other service businesses that would fit its disciplined Midwestern ways. Now it owns a pest and termite control specialist, a food service company, and a maid service for homes. It is also acquiring a company that guarantees the buyer of a house that the appliances within it will work.

Second, ServiceMaster momentously reorganized itself into a limited partnership, thereby escaping corporate income taxes and boosting earnings by about 80%. Simultaneously, as part of the reorganization, it spent $38 million to buy back a big block of its shares, a step that shrank its equity by more than half.

continued

NINE THAT LIGHT THE SKY

	COMPANY	RETURN ON EQUITY 1979-88		
		Average	**BEST** Year	**WORST** Year
1	SERVICEMASTER	63.7%	**142.2%** 1987	**30.9%** 1980
2	PRICE	28.5%	**43.2%** 1981	**19.3%** 1987
3	UNITED PARCEL SERVICE	28.3%	**37.3%** 1981	**16.1%** 1979
4	TANDY	26.0%	**40.0%** 1979	**15.1%** 1986
5	WAL-MART STORES	25.6%	**27.8%** 1988	**22.4%** 1981
6	FOOD LION	24.2%	**28.8%** 1979	**22.4%** 1982
7	BRUNO'S	22.4%	**35.3%** 1981	**15.4%** 1987
8	MARRIOTT	21.7%	**32.7%** 1988	**17.2%** 1979
9	MELVILLE	20.9%	**24.0%** 1979	**19.1%** 1985

To join this galaxy, drawn from the Service 500 lists starting on page 351, a company had to have averaged at least a 20% return on equity the past ten years, never sinking below 15%.

PHOTOGRAPHS BY KATHERINE LAMBERT

One bit of constancy: ServiceMaster's payouts, now called distributions instead of dividends, have stayed high. But the company's reduction in equity and increase in profits are today producing returns on equity that make even ServiceMaster's cherished returns of the past—30% and up—look poor and miserable. Last year, earning $64.6 million on $51.4 million in equity, the partnership showed an eye-popping return of 126%. Of course, the partnership had debt of $280 million, more than five times equity. That's not normal, God-fearing capitalization, except in leveraged buyout country.

Brooding over ServiceMaster and a pack of other companies that decamped into partnerships, the government rose up to block this escape route from income taxes. ServiceMaster, among others, was grandfathered and will be spared taxes until 1998, at which point it will begin to pay them and resume life in the slow lane. By then, C. William Pollard, ServiceMaster's chief executive, hopes to have paid down debt, to have gained growth from his acquisitions, and to be making high returns on equity the old-fashioned way.

Compared with ServiceMaster, the other two survivors from the 1984 list, both retailers, would appear to be relatively ho-hum—except that is patently not the way to describe one, Wal-Mart Stores. In baseball terms, Wal-Mart, whose $20 billion in revenues make it the nation's third-largest retailer, has been swinging for the fences forever. Still a corporate kid with stores in only 26 states, Wal-Mart is likely to pass K mart in 1990 and in five years could overtake Sears.

The other survivor is Melville, a specialty retailer and a singles and doubles hitter that

HOW MASTER LODGER BILL MARRIOTT PROPHESIED

It may have sounded brash in 1980 when J. W. Marriott Jr. publicly proclaimed Marriott Corp.'s intention to make better than 20% on stockholders' equity in the decade ahead. The company had averaged only 11% in the Seventies. But even as he spoke, Bill Marriott was stripping away the company's need for capital. He sold hotels while keeping the rights to manage them, and used the proceeds and borrowings to repurchase a third of Marriott's stock. In his head he had a picture of what is now chiseled in the record: an average ROE through 1988 of well over 20%, with no year's return below 18%.

Marriott's stock has leapt since then from a market value of $700 million to $3.5 billion. That's a nice gain for the family, with its 25% stake. Still, Bill Marriott's father, Willard, who raised this suburban Washington, D.C., company from root-beer stands and who was a hero to his son, originally fought the strategy. In the Depression, he'd seen a stream of debt-laden hotels go bankrupt. He liked real estate, conservatively financed, and he didn't like the stock market. The thought of selling hotels and borrowing to buy Marriott stock dismayed him.

But the father had done the unusual in his time also. A Mormon proscribed from drinking, he sold liquor in his hotels, believing it critical to success. His son was equally determined: "We wore him down. He went along because the management and the board supported the plan. But he never believed in it."

The elder Marriott died in 1985, at age 84, and within weeks the family suffered a second blow. Bill Marriott, then 53, was seriously burned. While he was trying to start a boat, the gas tank exploded. He survived by diving into the water, but the company shivered during his slow recovery. There is "magic," says a Marriott resort manager in having a man of the name at the top.

HE CAME BACK the same Bill Marriott: absorbed in work, family, and the Mormon church, in which he has been an active local leader. His compensation from Marriott is $1 million, his dividends the same, and he tithes as the religion commands. Two sons and a son-in-law hold jobs in the company. Are they as dedicated to it as he? He isn't sure: "They see how hard I work and I think they ask themselves if it's worth it. They've never said anything, but I wonder."

The Marriott empire, nearing $8 billion in revenues, sweeps widely today. In lodging it offers 121,000 rooms under the old name and new ones: Courtyard, Fairfield Inn, Residence Inn, and soon for the elderly, Brighton Gardens. The company runs and franchises 1,100 restaurants, among them the Roy Rogers, Bob's Big Boy, Allie's, and Host chains. It supplies in-house food to big employers and in-flight food to airlines.

IT IS, IN FACT, gigantic in food, getting 70% of its revenues—when hotel sales are figured in—from eats and drinks. As a huge centralized buyer, it uses leverage expertly, keeping payables high and gliding along with a negative working capital. Counting part-timers such as student/waiters, Marriott employs 230,000, making it the nation's ninth-largest private employer.

The man at the top—sometimes "the big M" in employee banter but routinely "Mr. Marriott" to his face—is serious, gentlemanly, and steeped in his business. In his dad's office he overheard mysterious chatter about "food cost percentages" before he'd even seen percentages in school. While a University of Utah undergrad, he toiled at a Marriott Hot Shoppe. Later he moved into the lock-step pattern of a corporate heir and he recalls occasionally pulling his rank: "I was rougher 25 years ago."

He has since won deep admiration in the company by knowing it so well. That does not make him a financial expert. The company's restructuring was mainly the idea of two Marriott alumni, Gary Wilson, now at Disney, and Alfred Checchi, an investor currently trying to take over Northwest Airlines with Wilson's help. But Bill Marriott listened.

Pressed to describe what he does best as a manager, Marriott says, "Maybe setting an example of hard work and concern for both the customer and the employee, while also driving hard to make money. People say you can't balance the two, but my father believed you could, and I do too."

His style, and his eminence, were on view recently at the company's 410-room Albuquerque hotel, one of nine Marriott establishments he visited in a pell-mell two days. Learning late that the boss was dropping in, the hotel's outgoing, energetic 38-year-old manager, Tom Chase, sped back from a trip—"I couldn't have Mr. Marriott on my property and not be here"—and all but personally scoured the kitchen and polished the lobby floor.

Arriving, Marriott was hailed by 40 employees lined up to just keeps getting on base. The largest of its 13 divisions include Marshalls, an off-price merchandiser; CVS, a discount drug chain; Kay-Bee, which sells toys; and Meldisco, the footwear licensee in K mart stores. From that vantage point, Meldisco is forced to watch Wal-Mart's smoke.

To these holdovers, add four newcomers that are also retailers. One, Tandy, owns the Radio Shack chain of stores, where it sells computers from its own factories and, in the words of one security analyst, exploits "a great, great franchise selling little pieces of wire at an enormous markup." Another, Price Co., a 13-year-old creative wonder, started the first U.S. warehouse clubs, which are no-frills, cement floor operations that sell food, hard goods, and you-name-it to small businesses and dues-paying folk. Years ago, Sam Walton of Wal-Mart, now 71, got a guided tour of a Price club from founder Sol Price, now 73, and his son, Robert, now 46 and chief executive. Walton went on to start imitations called Sam's Warehouse Clubs. Last year, Sam's and the Price clubs both had revenues of about $4 billion. But out of caution or gratitude for the idea, Walton has not yet put Sam's clubs into Price cities.

The same point does not apply to supermarket chains Food Lion, based in North Carolina, and Bruno's, headquartered in Alabama. Both have been expanding furiously—Food Lion ferociously—and though they have largely stayed out of each other's hunting grounds, some head-to-head competition is newly visible. Of the two, Food Lion is the most single-minded, using cookie-cutter stores to offer low, low prices to get high, high volume. Bruno's operates five chains (including some stores under the venerable Piggly

PROFIT AND PROSPERED

shake his hand, wearing their best. On an hour's tour, he grimaced at the lack of glaze on the pastries—"They're due to get it before they leave the kitchen," explained Chase—and noted the need for a catch-the-spills mat between kitchen and dining room. He stopped to check the "Guest Service Index"—a barometer of quality that had dipped, said Chase apologetically, because the water supply had been cut off when a nearby main broke, and because a visiting hockey team had been rowdy.

A photographer back-pedaling before him, Marriott posed with employees, smiling as if born to politics. Speaking to a handicapped kitchen worker named Sheila, he said, indeed, he remembered a letter she'd sent him four years before. And when the visit was over, Marriott told a reporter that the hotel looked very clean and in good shape and that Chase was an ideal sort for a manager: "He's friendly and pumped up, and that's why he's got great occupancy rates."

Overall, says Marriott, the company's occupancy is "at least ten points higher than the industry's," which is 63%. The company perennially stars in customer surveys done by *Business Travel News*. But the industry is overbuilt right now and rates are sticky. A decade ago, with rooms tight, Marriott hotels scored with rate increases that exceeded inflation rates by a couple of percentage points. Could they do it again if inflation flared? Considering the abundance of rooms, says Marriott, it would be hard.

He plans now to slow the building of standard, full-service hotels, concentrating instead on suite layouts and middle-market Courtyards and Residence Inns. He may add a few resort hotels to the 20 Marriott already has in such haunts as Barbados and Maui, and he wants to expand somewhat overseas, where the chain is relatively unfamiliar.

J.W. Marriott Jr.

MARRIOTT

■ *Chairman and boss since 1972, Bill Marriott, 57, gets kudos for knowing his businesses: lodging, restaurants, and food service.*

MARRIOTT WANTS NO PART *anywhere* of what he calls "trophy hotels"—the one-of-a-kind, luxury establishments that have recently been selling at enormous prices, often paid by foreigners. An industry rule of thumb says a hotel will fly economically if its rooms command rates equal to one-thousandth of their cost. Buying the Beverly Hills recently, the multi-billionaire Sultan of Brunei paid $750,000 per room, which means he needs $750 per night, about triple today's rate. The Sultan might not mind losing tankers of money. Bill Marriott would mind.

Ironically, the fervor of foreigners for hotels has made him reconsider his strategy of selling off Marriott's. The stock market, he notes, never used to recognize the real-estate value of hotels, but that's changing. Says Marriott, "We need to figure out a way to hang on to our hotels longer. We're working on that."

His comment implies that the company may soon have a big need for capital. Yet recently it has been buying its stock—again—and Marriott is still predicting rich returns on equity. They will stay north of 20%, he promises. You better believe.

Wiggly name) with more varied pricing.

Two generations of Waltons, Brunos, and Prices are represented in the managements of FORTUNE's stars, and a fourth family-run business is Marriott, whose lodging and food businesses are now headed by the founder's son, J. W. Marriott Jr. The remaining star in the galaxy, United Parcel Service, is not technically family run, but thinks of itself that way.

As investments, the stars have delivered celestial gains. Seven of the group were publicly traded at the end of 1978, UPS and Price being the exceptions. Over the next decade the median total return for the seven—that is, stock appreciation plus dividends—was 30.2% a year, compounded. That's a spectacular result compared with the 18.4% median registered by the entire Service 500.

RONALD AND ANGELO BRUNO

BRUNO's

■ *Birmingham-based father and son Angelo, 65, and Ronald, 37, have been successful at holding prices down in several types of supermarkets, from warehouse to upscale.*

Each of the seven beat that median. ServiceMaster, ironically, did the worst, 19.6%. Its stock has stagnated since the company turned itself into a partnership three years ago, mainly because earnings have also stalled. Wal-Mart—who else?—led the seven with a rate of 46%, and the Southeast sizzlers, Food Lion and Bruno's, were both at 36%.

No public market for UPS's stock exists. Instead, the shares are entirely in the hands of the company's managers and supervisors, who earn them as compensation. When a shareholder leaves, he must sell his stock back to the company at the currently prevailing price, set by UPS. Retiring, he unloads gradually, over ten years.

Because UPS stock does not trade publicly, FORTUNE's list of transportation companies does not present a total return for the company. But using price and dividend data UPS publishes every year, we figured its ten-year annualized return to be 34%. Not bad for a conservative outfit that is the oldest of the nine on our list—it was founded in 1907—and never lets its stock price get up to anything crazy like 12 times earnings. Price, the youngest of the nine, has paid no dividend since it was founded in 1976. But the rocketlike ascent of its stock reflects the company's inventiveness. Since the shares were first publicly traded in 1982, they have appreciated at a compound annual rate of 42%.

Of course, an investor could not tell years back just which companies would join our galaxy of stars. He could, however, have read FORTUNE's 1984 article celebrating the 12 stars of that era and decided to buy, picking up Wal-Mart, Melville, ServiceMaster, and the other nine.

In this not-so-dirty dozen, he would have done superbly—on balance—with four companies that faded from public view: Parsons, an engineering and construction company that went private; Lucky Stores, a supermarket chain bought out by another, American Stores; Electronic Data Systems, bought by General Motors; and Allied Bancshares, a Houston company that tottered and was taken over by First Interstate. While the investor's losses on Allied would have been Texas-size, his profits on the other three would have more than compensated.

Among the other 1984 companies that would have landed in the investor's portfolio are three that almost repeated in 1989: McDonald's, which had an average return on equity for the last decade of "only" 19.5%; Super Valu, a food wholesaler that slipped below 15% in one year; and Dun & Bradstreet, whose steady-Eddie returns of above 20% included too many nonrecurring gains that didn't count. Finally, the investor would have picked up two companies that later took some knocks: Phibro-Salomon (now called just Salomon), a Wall Street stumbler; and a catalogue showroom retailer, Service Merchandise, whose diversification into building supply warehouses helped produce losses from which the company has since recovered. As a group these five had a median total return below that of the S&P.

But at the end of 1988, the 12 boys of 1984, taken as a group, would have given an investor a median total return, annualized, of 19.4%. That beats the S&P, at 18.6%, by a relatively small but significant margin. The moral: A few strikeouts won't keep all-stars from scoring.

WHAT LESSONS can be divined from this year's stars? For starters, ServiceMaster has signed up a phone number that fits the other eight companies as well: 1-800-WE SERVE. In general, these companies roam their territories looking for new and better ways to supply what the public wants. Says Stanley Goldstein, chairman of Melville: "Whenever we think about buying a new division, we ask ourselves what value it will provide the customer. The answer may be price; it may be selection. But it's got to be something, or else forget it. The one thing we don't want to do is run after the God of Big Volume."

By not chasing volume, Melville got a bad start in a good race. The company failed originally to spot the big potential in athletic footwear stores like Woolworth's Foot Locker. "A valid criticism," says Goldstein. "We were myopic." Melville is now trying to catch up in this footrace with a two-year-old chain it calls Fan Club.

In the hotel business, high occupancy rates are plainly the key to success, and Marriott's are significantly above average. What's the secret? Answers Bill Marriott: "It's friendly service and taking very special care of every customer," which means catering to many different needs. Some guests want to stay in their rooms; some want to hang out in the cocktail lounge. Marriott points out that many business travelers are well-paid and gregarious salesmen: "They want to mix with people who are the same and don't want to meet someone across the front desk who's stuffy."

At UPS, service is a theology, based on the belief that what's good for the customer

REPORTER ASSOCIATE *William E. Sheeline*

STANLEY P. GOLDSTEIN

MELVILLE

■ *Bossing $7 billion in sales with a tiny staff in Harrison, New York, specialty retailer Goldstein, 55, likes hands-on divisional managers who "don't want to be in* Women's Wear Daily *wearing tuxes."*

will pay off ultimately for the company. UPS is pleased and proud when it can hold the line on package-delivery prices, as it did from 1985 to 1988. Its chairman, John W. Rogers, 55, thinks that profit margins of 6% to 7% are "about right"—fair for all, that is—and meets that target year after year. For the customers from which it automatically picks up packages for ground delivery every day, UPS added overnight air service a few years back. "We had to," says Rogers. "The customers wanted it." To keep its Big Brown trucks efficient, UPS is equipping them with onboard computers and has plunged into other unfamiliar technologies. The goal is simple, says UPS: "to provide the best possible service at the lowest possible cost to the public."

Sounding less eleemosynary but equally directed, Bruno's Brunos—ranging in age from founder Joseph, now 76, to his nephew, Ronald, 37—once described the supermarket business in an annual report as really simple to dissect: First, you have to have the right number of stores in the right places; second, you have to have the right people running them; third, you need to make a profit by keeping costs down.

In executing this strategy, Bruno's has sometimes come up with answers different from those of its Southeast competitor, Food Lion. Bruno's keeps most of its stores open 24 hours a day. But Food Lion long ago concluded that the extra business to be gained during wee hours did not offset the extra costs. Its 589 stores close by 11 P.M., and soon after a computer at headquarters, in Salisbury, North Carolina, douses the lights throughout the system.

Food Lion analyzes *everything* and scrimps unmercifully. The chain's original name was Food Town, but as it expanded it ran into a chain of the same name. "I've got the solution," said founder Ralph Ketner, now 68, decreeing a new name that allowed the company to keep all but two letters as it remade its signs. Employees are likewise induced by incentive awards to think thrifty. Tom Smith, Ketner's successor as CEO, recalls a warehouse employee who concluded, counterintuitively, that lighter cartons should be stacked below the heavier. The reason: It takes less time and energy to lift a light carton from the bottom than a heavy one. Food Lion bought the idea.

Ketner remembers a newspaper reporter once calling to ask what belt-tightening steps the company would be taking as a recession bore down. None, answered the boss: "If I told you some way I could improve, I'd be telling you about something I got careless on." Here cost cutting is a way of life, not a sporadic endeavor.

The same feverish attention to costs and details is visible at Wal-Mart and Price. From their functionally plain headquarters in Bentonville, Arkansas, Sam Walton and his managers exercise total control over their empire—masterminding inventories, store layouts, prices, and merchandising strategies. They are burning to pass K mart and Sears. After Congress cut corporate tax rates in 1986, Wal-Mart announced it would pass the savings along to its customers, and the Price clubs quickly followed. Says an analyst of the Prices, father and son: "They've always got the pressure on. I think their competitors wish they'd let up."

THE ANALYSTS themselves wish the Prices would be more talkative about their plans, or at least more amiable about refusing to talk. "They're ornery," says one analyst. "Neither would win a personality contest if their competitors were rattlesnakes." Speaking briskly to FORTUNE, Robert Price said he plans to expand the warehouse concept to furniture—"Yes, couches; yes, beds"—and acknowledged concern that management could lose its grip on operating controls as the company grows. He declined, with middling impatience, to say what he'll do with nearly $200 million of spare cash the company has piled up.

At the fast-and-furious growers—Wal-Mart and Food Lion particularly—spare cash is unknown. But Tandy and Marriott have been big repurchasers of their own stock over the years and have also been buying recently. Tandy has some distinct problems: a stock that peaked way back in 1983, a general weakness in its retail sales of computers, and particular problems in cracking the business market. The company, though, is an efficient, low-cost computer manufacturer and has newly contracted to sell its product under the Digital Equipment and Panasonic names. Asked whether Tandy can average a 20% return on equity over the next ten years, Chief Executive John V. Roach, 50, says that's an "ambitious number." But there are always interesting possibilities, he adds, "when you have the upside potential that can come from a burst of technology."

One small cloud passing in front of FORTUNE's stars, and all service companies of lesser brilliance, is the mounting difficulty in getting workers. Food Lion has met trouble in Raleigh and Richmond; ServiceMaster in Boston, New York, and Philadelphia. "There is a growing need to provide dignity to service workers," says ServiceMaster's Pollard. There may also be a need to pay more or add benefits. Many of these star companies offer profit sharing. But some, such as Marriott and Wal-Mart, do not also provide pensions. The majority, moreover, pay no medical bills for retirees, which makes the group far different from the typical big industrial company.

The stars are an optimistic lot. They expect to cope somehow with any employee shortages and to grow no matter what. Says President David Glass, 53, of Wal-Mart's future: "We believe there is far more opportunity ahead of us than anything we've experienced in our past." Hard work will, of course, be an essential for his company and all the others. The Bible has a verse for it: "In all labor there is profit," Proverbs 14:23. There, 1-800-WE SERVE, is a candidate for your next annual report. There, also, is a fundamental explanation of just what makes most stars shine.

AMERICA STILL REIGNS IN SERVICES

Japanese banks and British builders are on the march, and the global battle is intensifying. Is U.S. business about to get another black eye? Don't bet on it.

■ *by Sylvia Nasar*

THAT PROPHET of capitalism, Adam Smith, had little use for what we call the service economy. He dismissed the labors of tutors, shopkeepers, and household servants as backward or worse. A visionary in other ways, Smith could not foresee that service enterprises ultimately would become high-powered global competitors, every bit as cosmopolitan and as technologically advanced as manufacturers.

Whatever international whippings it has endured in manufacturing, the U.S. is still out front in services, where it is generally tops in efficiency. Last year American companies peddled an estimated $160 billion of ads, auto insurance, and other services to foreigners. Some $70 billion was in the form of service exports, in which the U.S. enjoys a trade surplus; the rest was purveyed by countless overseas outposts of American companies. While service companies as a whole took in roughly 5% of their revenues overseas, vs. 10% for the manufacturing sector, many were much more outgoing. Foreign sales ranged from about 10% to 40% for such service stalwarts as Toys "R" Us, Fluor Corp., Electronic Data Systems, American Internation-

JAMAICA
CHRISTIAN
BOYS HOME

After Hurricane Gilbert struck these Jamaican kids' orphanage last year, New York insurer American International Group paid for repairs.

al Group, Citicorp, and Arthur Andersen.

U.S. service companies are especially strong in the brainpower-driven services that businesses buy: investment banking, management consulting, telecommunications, information services, commercial insurance, and technical education. And America is no slouch in serving consumers either. More often than not, U.S. retail bankers, hotel chains, hospitals, and mass-merchandisers set the standards for efficiency and quality that foreign rivals strive to match. Only in a few industries—shipping and tourist travel, for example—have foreigners gained the upper hand.

So far, that is. Many economists and business executives worry that U.S. business, already bloodied in autos, consumer electronics, and memory chips, is headed for a similar fate in services. "Americans have no more natural advantages in producing financial instruments than in color TVs," says MIT economist and Nobel laureate Robert M. Solow. "We are in danger of losing our edge."

ON THE THEORY that the best defense is to carry the war into the enemy homeland, foreigners—many with deeper pockets, faster productivity growth, and proportionately higher R&D outlays—are attacking U.S. service companies in their own market. From Syracuse to Seattle, Europeans, Japanese, and—yes—citizens of Singapore are striving to become Americans' shopkeepers, bankers, builders, and hoteliers. Since 1980 they have almost quadrupled their investments in service enterprises on U.S. soil. Measured by book value, in fact, their $125 billion stake in the American service economy now exceeds U.S. direct investment in services abroad. (The foreign lead partly reflects accounting practices: U.S. investment abroad is older and is therefore carried on the books at lower prices.)

Five megatrends guarantee that international competition will heat up:

■ **Technology.** The global village will come into its own, thanks to breakthroughs in transportation, communications, and information technology that are driving down costs, churning out new products, and spreading new ideas as fast as you can fax from Fort Wayne to Frankfurt.

■ **Globalization of manufacturing.** U.S. companies are streaming abroad to supply support services as their clients scatter factories across oceans. EDS, the Dallas-based data-processing giant, went international in a big way on GM's coattails. Japanese construction kings Shimizu, Ohbayashi, and Kajima are busily building electronics factories and auto plants for Japanese clients in the U.S.

■ **Richer consumers.** Buoyant economic growth promises to lift incomes in Asia and Europe faster than in the U.S. As incomes grow, foreign consumers will devote a bigger share of their budgets to buying services. Taiwanese spend a quarter of their family budgets on services, far below Americans' 38%.

■ **Deregulation.** The removal of government's heavy hand has already lured scores of foreigners, such as British Telecom and Japan's Nomura, into U.S. telecommunications and financial services. Now American firms stand to benefit from a parallel trend in Europe and the Pacific Rim. Moves to deregulate international air travel should open new routes to U.S. carriers like Delta, United, and American.

UPS, whose minivans now careen through Hong Kong streets, is on the offensive overseas.

■ **Tumbling trade barriers.** The U.S.-Canada free-trade pact is a boon to the 910 Radio Shacks that Intertan, a Tandy Corp. spinoff, operates in Canada. As 1992 demolishes tariff walls in Europe, real estate consultant Grubb & Ellis, headquartered in San Francisco, expects plenty of calls from American and European clients eager to consolidate their factory and warehouse operations there.

U.S. service companies, government figures show, are stunningly efficient. American service workers outproduce their Japanese counterparts, for example, in transportation and communications, business and consumer services, and wholesale and retail trade (see chart). American outfits are, on average, bigger, more automated, and less sheltered from competition. Retail prices are 50% higher in Japan than in the U.S., largely because of inefficient middlemen. Only in financial services is Japan ahead, having splurged on computers, software, and the latest communications gear.

The U.S. service sector as a whole is awash in new technology. Service companies have increased their stock of equipment 66% over the past decade, twice as fast as manufacturers. As a result, their gear is much sprightlier. Its average age had fallen below seven years at the end of 1988, vs. more than nine in factories.

Impressive as this firepower is, the U.S. service industry will have to strive even harder to stay ahead in productivity. "Others are growing faster," warns C. Jackson Grayson, chairman of the American Productivity and Quality Center in Houston. American productivity is bounding ahead in a few key businesses—telecommunications, airlines, commercial banking, and wholesale trade—but the average gain in the services has slumped from 2.1% a year

Projects like this Shell refinery in England are reviving overseas revenues at Fluor Corp.

in the Fifties and Sixties to 0.5% since then.

The U.S., with 12.7% of the world market in 1987, is the top exporter of services, ahead of second-ranking France (9.7%) and third-ranking West Germany (9.5%). Services are exported when a citizen of Hong Kong, say, checks in to a Chicago hospital, or a New York management consultant jets to Jiddah to supply advice to a Saudi Arabian client. Despite large deficits in shipping, tourism, and travel, the U.S. has run a trade surplus in services since the Sixties. The surplus ballooned from $3 billion in 1987 to nearly $8 billion in 1988 as surging foreign demand and the cheap dollar drove up U.S. exports by 16%. John Hagens, an economic forecaster at WEFA Group, expects service exports to climb 5% a year after inflation throughout the Nineties, about as fast as U.S. factory exports and three times as fast as service imports.

America's export prowess may be even greater than it looks. A recent study by the Office of Technology Assessment speculates that actual sales abroad may be some 60% higher than reported. Missing from the official tally are such professional services as computer consulting, public relations, and the advice purveyed last year by law firms like Skadden Arps Slate Meagher & Flom, which has upwards of 60 Japanese clients. Those given to griping about the litigious nature of American society can take comfort that the U.S. exports twice as much legal advice as it imports.

MOST SERVICES American companies sell to foreigners are performed by employees stationed abroad and paid for in local currency; hence, they don't count as exports. Arthur Andersen, the accounting firm, which earns 40% of its revenues abroad, has a network of 48 foreign partnerships. The Big Eight firms dominate Europe. Sales by overseas subsidiaries of U.S. service companies have been rising roughly 6% a year in the Eighties.

How can U.S. service companies keep winning in the international arena? A look at seven businesses shows what succeeds and what doesn't. Vigorous American contenders are triumphant in three of them, moving up fast in two others, and counterattacking in two more in which their compatriots have lost terrain.

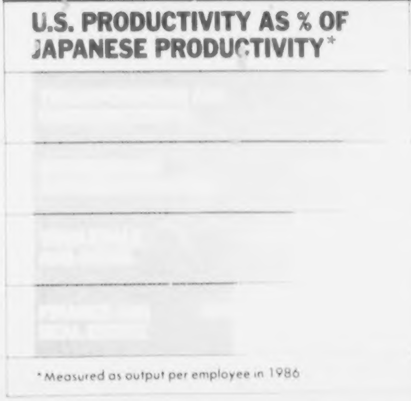
■ **Computer services.** Abundant capital—specifically, the largest installed base of computers in the world—goes a long way toward explaining the substantial U.S. edge in the $95 billion market for data processing, custom software, assistance in setting up computer networks, and the like. Exports recently exceeded imports by an astounding 31-to-1 margin.

Indeed, the global wrestling match is pretty much dominated by American companies—Arthur Andersen, IBM, Boeing, and others—though Britain's Logica offers growing competition in its home market, and France's Cap Gemini is taking a $160-million-a-year bite out of the U.S. market. Dallas-based EDS garnered $800 million in overseas revenues last year, a sixth of the total, and boosted profits by 19%. Though nearly half its foreign business still is with GM, the company's foreign client list is beginning to read like the Who's Who of global industry. Helping those clients integrate their computer and communications systems is one of EDS's fastest-growing services.

■ **Retailing.** U.S. merchants have been profiting from a classic formula for success: doing abroad what has worked superbly at home. The strategy sometimes misses: ask Sears and J.C. Penney, which flopped in Europe. But it is working wonders for specialty

REPORTER ASSOCIATE *Sarah Smith*

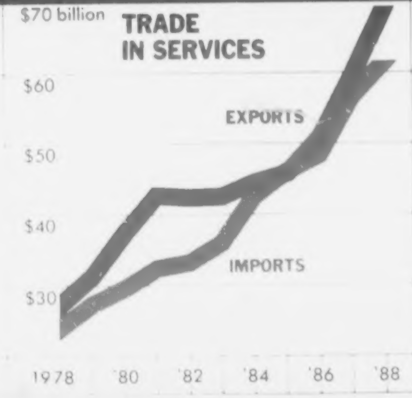
THE U.S. LEADS IN SERVICE EFFICIENCY . . .



U.S. PRODUCTIVITY AS % OF JAPANESE PRODUCTIVITY*

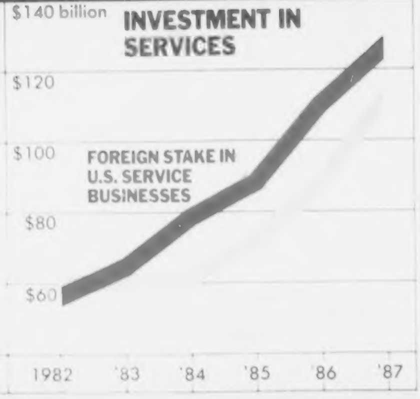
*Measured as output per employee in 1986

AND RUNS A TRADE SURPLUS . . .



TRADE IN SERVICES

BUT FACES GROWING FOREIGN COMPETITION AT HOME



INVESTMENT IN SERVICES

retailers. The foreign sales of Toys "R" Us, based in Paramus, New Jersey, shot up 75%, to $367 million, in 1988. The company, which has opened 25 stores in Europe in the past four years, just established its first Malaysian outpost in Kuala Lumpur. Says Joseph Baczko, head of its international division: "Our strategy is pretty much the same around the world. Eighty percent of our products are the same too."

Forth Worth's Intertan opened 102 new Radio Shack and Tandy stores last year and expects to top that number in 1989. A breakeven operation before it was turned loose by Tandy Corp., Intertan is chalking up handsome profits now. "We're not doing anything radically different," says chief financial officer Garland Asher, pointing out that the former parent treated the global business as a stepchild. Intertan replaced American expatriates with local managers attuned to local demand. Canadian customers are content with seven different electronic keyboards, but rock-mad British teens want twice as many to choose from.

■ **Insurance.** Around the world, this remains mostly a domestic business. All the more amazing, then, that New York City's American International Group collects 40% of its premiums abroad, vs. less than 1% for U.S. insurers as a whole. AIG's unique advantage is its far-flung archipelago of 375 insurance offices in 130 countries. "You cannot just sell insurance. You have to service it," says CEO Maurice Greenberg, who adds that multinationals of all countries increasingly prefer one-stop shopping for their insurance needs.

AIG offers exotic policies like expropriation insurance, and it excels at fine-tuning products to local needs. In Japan, it markets accident and health policies with—what else?—built-in savings features. AIG's foreign profits have been spurting 20% a year on average since the mid-Eighties.

■ **Airlines.** In some businesses, a powerful home base can be as much of an advantage abroad as the latest technology or the neatest new product. American Airlines, a classy carrier with a 17% market share in the U.S., is a case in point. So is its most dynamic rival in the North Atlantic, resurgent British Airways, now the leading international carrier worldwide. But American has lower costs, the world's biggest computer reservation system, and a record for reliable service that has helped it become No. 6 in the North Atlantic in just four years.

■ **Air courier services.** The war over the exploding international air courier market is testing the U.S. edge in service organization and efficiency. UPS and Federal Express have used their dominance in the U.S. to vault into the global market, directly challenging Brussels-based DHL, which controls most of the international business. Both invaders are spending heavily to acquire a global air and ground network. Although they are winning customers, neither is yet in the black overseas.

"We're the only financial service company that has pursued the consumer worldwide—with our normal voracious appetite," says a Citicorp exec.

Driving down costs is the key to victory in what is increasingly becoming a commodity business. "That is a way of life at UPS," says Donald Layden, senior vice president for international air operations. "We track our costs per package or kilometer. We let our foreign managers know what they are and ask them to keep costs in line or rein them in." UPS has recently expanded its overnight document deliveries from 41 to 163 countries. Should you wish to send a message to Fidel from anywhere outside the U.S., these are the folks to call. UPS is the only courier in Cuba.

■ **Banking.** Measured by share of major banks' world assets, Japan's banks now outrank the U.S., 24% vs. 22%. U.S. banks—Wells Fargo and First Chicago, to name two—have mostly been retreating from global markets. A glittering exception is Citicorp, which now employs 26,000 retail bankers in 40 countries. "We're the only financial service company that has pursued the consumer market worldwide—with our normal voracious appetite, I might add," says Richard Braddock, who head's Citi's $8 billion consumer banking division. Revenues have been growing more than 20% a year abroad for the past five years, faster than in the U.S. In 1988 overseas profits soared 24%.

Citi gets business in Britain by processing mortgage applications in a week, one-quarter the time it takes competitors. In Hong Kong it is the biggest financer of taxis. Citi's innovations—touch-screen automatic teller machines and Citi-One accounts, for example—are wowing gadget-obsessed Koreans and Japanese.

■ *The* FORTUNE *Service 500 directory begins on page 358.*

■ **Industrial construction.** The U.S. is still the world's top international contractor, with 25% of the market in 1987, but that's a shadow of its 45% chunk in 1980. Specialists in big projects, American companies got blasted in the early Eighties by higher interest rates, collapsing oil prices, and Third World debts. Fluor Corp. of Irvine, California, saw its foreign business shrink from 90% of contracts in 1976 to just 10% in 1985. Japanese, not American, builders increasingly pioneer new methods. Also, they can count on cheaper capital. Says Gerald Glenn, the head of marketing for Fluor's international subsidiary: "The name of the game is, bring some money."

To become more competitive, says Glenn, "the smart U.S. companies are spending a lot on R&D and on training." Fluor has been spending heavily on computer-aided engineering, communications networks, and cost-control and scheduling systems. The company's new foreign contracts quadrupled last year to $1.4 billion, 24% of the total. Fluor's goal is 40% to 60% by the mid-Nineties, mostly from projects in the Pacific Rim and Europe.

AND WHAT of all those foreign service outfits hammering away at U.S. dominance? Some are conquering. Other nations now boast the world's biggest janitorial service, ad agency, and equipment-leasing company. Dow Jones's Telerate, a database giant on Wall Street, is a dwarf in Europe, where British-based Reuters has 70% of the business to the Yank firm's 10%. U.S. service imports jumped 9% last year, with consequences especially galling to Blount, the Alabama-based heavy-construction firm. Blount, which does hardly any building abroad, recently lost a bid to British-owned Taylor Woodrow to build a Jacksonville, Florida, jail. When it comes to services, American companies are no pushovers. But count on the foreigners to keep on pushing.

COMPENSATION

SEEKING THE SENSE IN CEO PAY

Sometimes there's precious little. In an exclusive study, a noted compensation consultant shows what really influences the take at the top—and what doesn't.

■ *by Graef S. Crystal*

TOP PAY, TOP PERFORMANCE

Gulf & Western's Martin Davis

Coca-Cola's Roberto Goizueta

Reebok's Paul Fireman

WHAT'S going on with CEO pay? FORTUNE asked Graef S. Crystal to answer that question, repeating a groundbreaking study that he conducted last year and wrote about in this magazine (June 6, 1988). Widely considered the dean of U.S. compensation consultants, Crystal has counseled hundreds of large companies. He spent 18 years with a major consulting firm and is now a professor at the Haas School of Business of the University of California at Berkeley. His report:

Ask CEOs how they should be paid, as FORTUNE recently did, and nearly all respond reasonably: They should be paid according to performance (see poll, page 109). But strangely, boards of directors don't seem to be getting the message. In 1988, as in past years, the chiefs of America's largest companies were often paid according to who knows what measure. My study of CEO compensation reveals a wide array of factors that ought to influence pay but don't. We can only imagine which factors are really making a difference.

This study assumes that the market for top executive talent is genuinely free—no government authority is telling directors whom to hire or fire—and that the average CEO is therefore neither overpaid nor underpaid. But the results, as well as my own experience as a compensation consultant, suggest that this market is hardly efficient. So even though the average CEO gets what

CEOs who most exceeded the computer model's pay . . .

	CEO	COMPANY	PERFORMANCE IQ	COMPENSATION in thousands		
				ACTUAL	MODEL	PERCENT HIGHER
1	Richard K. Eamer	NAT'L MEDICAL ENTERPRISES*	96	$6,337	$1,661	282%
2	Martin S. Davis	GULF & WESTERN	103	$6,339	$1,796	253%
3	Michael D. Eisner	WALT DISNEY	110	$14,041	$4,350	223%
4	Paul B. Fireman	REEBOK	123	$11,439	$4,049	183%
5	Robert L. Crandall	AMR	97	$3,717	$1,438	158%
6	Roberto C. Goizueta	COCA-COLA	113	$5,042	$2,053	146%
7	Robert E. Mullane	BALLY MANUFACTURING	89	$3,002	$1,323	127%
8	S. Parker Gilbert	MORGAN STANLEY GROUP	103	$4,705	$2,115	122%
9	James Wood	GREAT ATLANTIC & PAC. TEA*	104	$3,060	$1,400	119%
10	David M. Roderick	USX	91	$2,458	$1,229	100%

Factors you would expect to influence CEO pay, such as company size and performance, explain only part of it. The computer model, explained in the article, calculated each CEO's

*1987 data.

TOP PAY, LOW PERFORMANCE

USX's David Roderick

he or she is worth, some CEOs get far more and others get far less.

Like its predecessor, this year's study started by focusing on 200 major companies: The 100 biggest from the FORTUNE Industrial 500 and the 100 top companies from the eight subgroups of the Service 500. Several companies were dropped because of ownership by a foreign parent, a change of CEOs during the year, or financial statistics that make comparisons impossible, such as Holiday Corp.'s huge negative net worth, an aftertaste of its leveraged recapitalization. The number of companies in the final sample: 161.

A CEO's pay is the sum of base salary, bonus, and, when reported, the value of such lavish perks as company cars and apartments. It also includes the *annualized* value of long-term incentives, such as stock option gains, restricted share grants, and performance unit payouts. Unlike base salary and bonus payments, these long-term incentives don't usually pay off every year, so I have chosen to smooth them out over five years. For example, that mammoth $33 million option gain that Walt Disney's Michael Eisner took last year shows up as $6.6 million—one-fifth of the total—in his 1988 pay and will show up that way annually for the next four years.

To gauge company performance, I looked at several measures: net income for 1988, growth in sales and shareholders' equity over the past five years, return on equity for 1988 and for the past five years, average market-value-to-book-value ratio over the past three years, and compounded annual total return to investors over the past five and ten years.

Combining all these measures produced a so-called Performance IQ score. The average-performing company in the study had a Performance IQ of 100. The best-performing company, Reebok, had an IQ of 123, while National Intergroup, a Pittsburgh pharmaceutical distribution company, brought up the rear with an IQ of 82. (Last year's dullard, BankAmerica, improved its IQ from 76 to 86, no mean feat given the way IQ scores are constructed.)

Of course, performance isn't the only element you would expect to influence CEO pay. I also considered company size, business risk, the CEO's tenure, and many other

LOW PAY, TOP PERFORMANCE

Wal-Mart's Sam Walton

UAL's Stephen Wolf

. . . and those who lagged furthest behind

	CEO	COMPANY	PERFORMANCE IQ	COMPENSATION in thousands ACTUAL	MODEL	PERCENT LOWER
152	Ronald W. Allen	DELTA AIR LINES•	97	$533	$1,178	−55%
153	E. Dean Werries	FLEMING COS.	96	$563	$1,301	−57%
154	Herbert D. Conant	TURNER	92	$396	$924	−57%
155	M. R. Greenberg	AMERICAN INT'L GROUP	103	$975	$2,349	−58%
156	Stephen M. Wolf	UAL	108	$594	$1,433	−59%
157	Richard A. Clarke	PACIFIC GAS & ELECTRIC	96	$455	$1,151	−60%
158	George M. C. Fisher	MOTOROLA	95	$708	$1,865	−62%
159	Lew R. Wasserman	MCA	97	$582	$1,563	−63%
160	Harold B. Finch Jr.	NASH-FINCH	100	$338	$1,010	−67%
161	Sam M. Walton	WAL-MART STORES•	120	$325	$1,954	−83%

pay as if it reflected just such factors. Deviations, seen in the far right-hand columns, don't necessarily mean a CEO is overpaid or underpaid, but they're reason for a closer look.

factors (detailed below) and for each company entered these data into a computer along with the CEO's pay. Using the statistical technique of multiple regression analysis, I determined how strongly each factor actually influenced pay in the group overall. Then I applied this information to each CEO's case to see how he *would* have been paid if his board of directors had followed the norms of this 161-company group. That's the "model" compensation figure in the accompanying tables. It is different for each CEO, since each represents a unique set of circumstances. And often it's far different from what that CEO actually received.

ALAN D. LEVENSON

NME's Richard Eamer

Just because my study shows someone as high or low isn't proof that the person is overpaid or underpaid. But if the deviation is significant enough, a look behind the numbers makes sense. Perhaps the CEO is being paid in advance of a turnaround that the board hopes will materialize. Perhaps the company has had to pay dearly to recruit a superstar or to keep the one it believes it already has. But perhaps, at the end of the day and after all the performance measures have been put on the table and all the rationalizations seen for what they are, the board just isn't doing its job.

Consider the ten CEOs who most exceeded their predicted pay (see table). Leaving out Morgan Stanley, which has been public for less than five years, and AMR, which has had mixed performance over the past five years, this turns out to be not one group but two—let's call them the White Hats and the Black Hats.

MICHAEL L. ABRAMSON—WOODFIN CAMP

Bally's Robert Mullane

In the White Hat group we have Gulf & Western, Walt Disney, Reebok, Coca-Cola, and Great Atlantic & Pacific Tea. The CEOs of these five companies need not take a back seat to anybody. Their average Performance IQ is 111, and over the past five years they have produced a walloping 32% compounded annual total return to investors. These CEOs took a lot of money

REPORTER ASSOCIATE *Constance A. Guske*

CEOs who exceeded the computer model's pay

	CEO	COMPANY	PERFORMANCE IQ	COMPENSATION in thousands		
				ACTUAL	MODEL	PERCENT HIGHER
11	Robert D. Krebs	SANTA FE SOUTHERN PACIFIC	90	$1,590	$807	97%
12	J. Peter Grace	W.R. GRACE	92	$2,498	$1,305	91%
13	Rand V. Araskog	ITT	95	$4,439	$2,365	88%
14	Lyle Everingham	KROGER	101	$2,347	$1,339	75%
15	Armand Hammer	OCCIDENTAL PETROLEUM*	95	$2,495	$1,449	72%
16	William P. Stiritz	RALSTON PURINA	117	$4,099	$2,502	64%
17	B. F. Dolan	TEXTRON	97	$2,362	$1,483	59%
18	John H. Gutfreund	SALOMON	101	$4,159	$2,691	55%
19	August A. Busch III	ANHEUSER-BUSCH	107	$3,688	$2,454	50%
20	F. Ross Johnson	RJR NABISCO	109	$3,453	$2,424	42%
21	William A. Schreyer	MERRILL LYNCH	94	$3,047	$2,188	39%
22	Andrew C. Sigler	CHAMPION INTERNATIONAL	94	$2,458	$1,780	38%
23	Dean L. Buntrock	WASTE MANAGEMENT	110	$3,312	$2,417	37%
24	Richard L. Gelb	BRISTOL-MYERS	108	$4,052	$2,964	37%
25	John W. Teets	GREYHOUND	95	$1,895	$1,400	35%
26	Hays T. Watkins	CSX	93	$1,346	$1,000	35%
27	J. L. Ketelsen	TENNECO	95	$1,736	$1,330	31%
28	Zane E. Barnes	SOUTHWESTERN BELL	101	$2,015	$1,605	26%
29	David C. Farrell	MAY DEPARTMENT STORES*	102	$1,949	$1,588	23%
30	A. W. Clausen	BANKAMERICA	86	$1,529	$1,266	21%
31	John A. Young	HEWLETT-PACKARD	101	$2,277	$1,888	21%
32	Jack MacAllister	U.S. WEST	101	$1,617	$1,354	19%
33	Richard J. Mahoney	MONSANTO	98	$1,612	$1,392	16%
34	Thomas E. Bolger	BELL ATLANTIC	103	$1,521	$1,329	14%
35	John H. Bryan Jr.	SARA LEE*	107	$2,663	$2,339	14%
36	Anthony J.F. O'Reilly	H.J. HEINZ*	109	$2,124	$1,880	13%
37	Ray B. Mundt	ALCO STANDARD	99	$1,435	$1,324	8%
38	Robert A. Hanson	DEERE	91	$1,050	$970	8%
39	Charles F. Knight	EMERSON ELECTRIC	102	$1,811	$1,677	8%
40	Richard J. Flamson III	SECURITY PACIFIC	98	$2,265	$2,123	7%
41	H. B. Atwater Jr.	GENERAL MILLS*	110	$1,669	$1,571	6%
42	George M. Keller	CHEVRON	98	$1,712	$1,627	5%
43	Richard M. Morrow	AMOCO	102	$1,696	$1,612	5%
44	T. Marshall Hahn	GEORGIA-PACIFIC	98	$2,045	$1,946	5%
45	Ted C. Wetterau	WETTERAU*	102	$1,240	$1,185	5%
46	John R. Hall	ASHLAND OIL	99	$1,353	$1,299	4%
47	Vernon R. Loucks Jr.	BAXTER INTERNATIONAL	93	$1,442	$1,391	4%
48	Drew Lewis	UNION PACIFIC RAILROAD	96	$1,461	$1,421	3%
49	Charles E. Exley Jr.	NCR	101	$2,588	$2,532	2%
50	W. M. Blumenthal	UNISYS	97	$2,080	$2,036	2%
51	Edward L. Hennessy	ALLIED-SIGNAL	96	$2,267	$2,235	1%
52	David H. Murdock	CASTLE & COOKE	94	$1,558	$1,543	1%
53	Walter V. Shipley	CHEMICAL BANKING	94	$1,758	$1,745	1%
54	J. F. McGillicuddy	MANUFACTURERS HANOVER	92	$1,755	$1,753	0%
55	Charles M. Harper	CONAGRA*	106	$1,809	$1,808	0%

CEOs who trailed the computer model's pay

						PERCENT LOWER
56	Kenneth A. Macke	DAYTON HUDSON	98	$1,416	$1,417	0%
57	Darwin E. Smith	KIMBERLY-CLARK	104	$1,573	$1,585	−1%
58	Howard M. Love	NATIONAL INTERGROUP*	82	$740	$755	−2%
59	Allen E. Murray	MOBIL	100	$2,444	$2,499	−2%
60	L. S. Skaggs	AMERICAN STORES*	99	$1,205	$1,237	−3%
61	W. C. McCord	ENSERCH	87	$679	$706	−4%
62	Donald E. Petersen	FORD MOTOR	117	$4,073	$4,239	−4%
63	J. D. Robinson III	AMERICAN EXPRESS	103	$4,122	$4,309	−4%
64	Vincent A. Sarni	PPG INDUSTRIES	103	$1,791	$1,877	−5%

*1987 data

out of their companies, but they undoubtedly left enormous sums for their shareholders—far more than those shareholders could ever reasonably have expected to receive. Sure, you could argue that these men are paid too much. But with performance like this, who wants to argue?

In the Black Hat group we have National Medical Enterprises, Bally Manufacturing, and USX. The CEOs of these companies take a back seat to almost everybody. Their average Performance IQ is 92, and over the past five years they have produced a 2% compounded annual total return to investors. Shareholders would have been far better off putting their money in 90-day T-bills than investing in these companies, and they would have had hugely less risk. These CEOs took a lot of money out of their companies, and they left precious little for their shareholders.

ANDY FREEBERG

A&P's James Wood

Does any logic lurk amid the apparent capriciousness of CEO pay? Yes, a bit. Some factors you would expect to influence top-level compensation actually do—a little. They are:

■ **SIZE.** Running General Motors may not be twice as challenging as running a company with half its sales, but it is at least a bit more challenging. The study examines a combination of company sales, total assets, and shareholders' equity to gauge size. It finds that, other things being equal, a 10% increase in size actually translates into a 2% increase in CEO pay.

■ **PERFORMANCE.** A change in Performance IQ from 100 to 110—a very considerable increase on this scale—raises the CEO's pay 26%. That's a decline from last year, when the increase was 31%. The average performance IQ of the ten companies that pay relatively the least to their CEOs is 100. Yet the average performance IQ of the ten companies that pay relatively the most to their CEOs is only 103.

■ **BUSINESS RISK.** The Beta on the company's stock—a measure of its relative price volatility—reflects the fact that some

CEOs who trailed the computer model's pay

	CEO	COMPANY	PERFORMANCE IQ	COMPENSATION in thousands ACTUAL	MODEL	PERCENT LOWER
65	John G. Smale	PROCTER & GAMBLE*	101	$1,450	$1,533	−5%
66	William D. Smithburg	QUAKER OATS*	108	$1,490	$1,583	−6%
67	Lee A. Iacocca	CHRYSLER	109	$5,874	$6,251	−6%
68	Lodwrick M. Cook	ATLANTIC RICHFIELD	102	$1,767	$1,886	−6%
69	Thomas L. Phillips	RAYTHEON	103	$1,126	$1,216	−7%
70	David A. Jones	HUMANA	100	$1,090	$1,186	−8%
71	Philip E. Lippincott	SCOTT PAPER	102	$1,351	$1,475	−8%
72	Robert E. Mercer	GOODYEAR TIRE & RUBBER	101	$1,279	$1,413	−9%
73	Robert Schoellhorn	ABBOTT LABORATORIES	113	$2,421	$2,676	−10%
74	Lewis T. Preston	J.P. MORGAN	101	$2,088	$2,329	−10%
75	Charles S. Sanford Jr.	BANKERS TRUST NY CORP.	98	$2,220	$2,483	−11%
76	John F. Welch Jr.	GENERAL ELECTRIC	108	$4,467	$5,019	−11%
77	Orion L. Hoch	LITTON INDUSTRIES	97	$1,336	$1,520	−12%
78	Edmund T. Pratt Jr.	PFIZER	104	$2,810	$3,201	−12%
79	David S. Tappan Jr.	FLUOR	86	$960	$1,097	−12%
80	Thomas F. Frist Jr.	HOSPITAL CORP. OF AMERICA	94	$1,332	$1,526	−13%
81	G. B. Mitchell	DANA	98	$1,084	$1,242	−13%
82	Anthony R. Hamilton	AVNET*	90	$1,189	$1,364	−13%
83	Allen F. Jacobson	MINNESOTA MINING & MFG.	104	$1,399	$1,614	−13%
84	James E. Burke	JOHNSON & JOHNSON	108	$1,988	$2,354	−16%
85	James W. Kinnear	TEXACO	91	$1,424	$1,710	−17%
86	Reuben Mark	COLGATE-PALMOLIVE	102	$1,481	$1,790	−17%
87	Robert D. Kennedy	UNION CARBIDE	103	$1,586	$1,923	−18%
88	W. R. Howell	J.C. PENNEY	101	$1,042	$1,264	−18%
89	O. S. Wyatt Jr.	COASTAL	99	$1,066	$1,299	−18%
90	D. O. Andreas	ARCHER DANIELS MIDLAND*	98	$1,104	$1,346	−18%
91	R. Gordon McGovern	CAMPBELL SOUP	101	$1,068	$1,316	−19%
92	Richard E. Heckert	DU PONT	102	$2,036	$2,517	−19%
93	Thomas W. Field Jr.	MCKESSON*	98	$1,215	$1,510	−20%
94	Wilton Looney	GENUINE PARTS	103	$767	$956	−20%
95	John L. Clendenin	BELLSOUTH	103	$1,229	$1,539	−20%
96	John F. Woodhouse	SYSCO	103	$1,150	$1,449	−21%
97	Edward A. Brennan	SEARS ROEBUCK	98	$1,535	$1,948	−21%
98	G. H. Weyerhaeuser	WEYERHAEUSER	96	$1,104	$1,406	−21%
99	John C. Marous	WESTINGHOUSE ELECTRIC	104	$1,459	$1,863	−22%
100	Edward L. Addison	SOUTHERN	98	$828	$1,060	−22%
101	Roger B. Smith	GENERAL MOTORS	105	$2,341	$3,030	−23%
102	Emil P. Martini Jr.	BERGEN BRUNSWIG	97	$1,072	$1,401	−23%
103	R. J. Ventres	BORDEN	104	$1,477	$1,931	−24%
104	John A. Georges	INTERNATIONAL PAPER	96	$1,434	$1,973	−27%
105	Kenneth H. Olsen	DIGITAL EQUIPMENT	103	$2,139	$2,967	−28%
106	Willard C. Butcher	CHASE MANHATTAN	95	$1,662	$2,312	−28%
107	John S. Reed	CITICORP	98	$2,177	$3,035	−28%
108	Delbert C. Staley	NYNEX	102	$1,250	$1,745	−28%
109	Colby H. Chandler	EASTMAN KODAK	101	$1,257	$1,792	−30%
110	James L. Johnson	GTE	100	$1,143	$1,665	−31%
111	William O. Bourke	REYNOLDS METALS	98	$1,115	$1,632	−32%
112	Walter F. Williams	BETHLEHEM STEEL	88	$729	$1,071	−32%
113	Charles W. Moritz	DUN & BRADSTREET	111	$1,717	$2,566	−33%
114	Stanley C. Pace	GENERAL DYNAMICS	100	$1,218	$1,830	−33%
115	Thomas S. Murphy	CAPITAL CITIES/ABC	104	$1,547	$2,324	−33%
116	P. Roy Vagelos	MERCK	122	$2,702	$4,122	−34%
117	Thomas Cruikshank	HALLIBURTON	86	$738	$1,126	−34%
118	Joseph J. Pinola	FIRST INTERSTATE BANCORP	91	$1,193	$1,821	−34%
119	D. Wayne Calloway	PEPSICO	109	$2,021	$3,102	−35%
120	James R. Eiszner	CPC INTERNATIONAL	107	$1,519	$2,362	−36%

*1987 data.

businesses are a lot riskier than others. Increasing your Beta from the normal value of 1.00 to 1.10 translates into a 5% increase in pay, the same increase as last year.

■ COMPENSATION RISK. A base salary carries virtually no risk—it is almost never cut—and past studies I have conducted show that so-called short-term incentive awards don't carry much more. Restricted stock grants also have little risk, since the executive receives all of a share's value and the dividends to boot. But stock options are something else. They reward the executive only if the stock rises. As any sophisticated investor knows, options are inherently riskier than a company's underlying stock: If the Beta of a company's stock against the overall market is, say, 1.00, the Beta of its stock options against the overall market may be 2.00 or even higher. As a gauge of an executive's compensation risk, I analyzed the percentage of the total compensation package deriving from stock option gains. The average was 10%. When the proportion rises to 20%, the greater weight of the options means the CEO is taking greater risk. In this group, his pay accordingly rises 6%.

■ TENURE. Despite frequent talk about cronyism between chiefs and directors, a long-serving CEO—one who not only knows his outside directors exceedingly well but also was probably instrumental in their selection—earns less than a new hire. Other things being equal, a CEO earns 8% *less* pay for every ten extra years of service with his company.

■ INDUSTRY. In last year's study two major industries, transportation and utilities, paid substantially less than other industries after all factors just discussed were held constant. A third industry, retailing, was close to joining the low-paying group. In this year's study transportation paid 24% less than average, and retailing 28% less. The utility industry has been restored to full compensation health—or at least the industry's telecommunications component has. It's hard to think of the Baby Bells as babies anymore when you look at what they're paying. But their poor cousins, the power utilities, are still poor in terms of CEO pay and getting relatively poorer by the year.

■ LOCATION. Everybody says you'd be crazy to work in New York City except for a ton of money. Well, they're right. Other things being equal, working in New York

CEOs who trailed the computer model's pay

	CEO	COMPANY	PERFORMANCE IQ	COMPENSATION in thousands ACTUAL	MODEL	PERCENT LOWER
121	Paul H. O'Neill	ALUMINUM CO. OF AMERICA	95	$1,113	$1.735	−36%
122	James T. Lynn	AETNA LIFE & CASUALTY	97	$1,441	$2,254	−36%
123	James J. Renier	HONEYWELL	87	$580	$931	−38%
124	Robert F. Daniell	UNITED TECHNOLOGIES	96	$1,228	$1,980	−38%
125	Edward H. Budd	TRAVELERS	94	$975	$1,610	−39%
126	William J. Alley	AMERICAN BRANDS	104	$1,427	$2,364	−40%
127	Frank P. Popoff	DOW CHEMICAL	108	$1,433	$2,415	−41%
128	Hamish Maxwell	PHILIP MORRIS	114	$2,232	$3,762	−41%
129	M. Anthony Burns	RYDER SYSTEM	98	$1,230	$2,106	−42%
130	Joseph E. Antonini	K MART	100	$938	$1,633	−43%
131	George A. Schaefer	CATERPILLAR	94	$723	$1,262	−43%
132	Jerry R. Junkins	TEXAS INSTRUMENTS	95	$927	$1,630	−43%
133	John R. Stafford	AMERICAN HOME PRODUCTS	113	$1,542	$2,718	−43%
134	Steven G. Rothmeier	NWA	93	$655	$1,167	−44%
135	Brenton S. Halsey	JAMES RIVER*	98	$984	$1,761	−44%
136	Jack Twyman	SUPER FOOD SERVICES	101	$589	$1,057	−44%
137	Robert Van Tuyle	BEVERLY ENTERPRISES	86	$646	$1,169	−45%
138	Norman R. Augustine	MARTIN MARIETTA	102	$926	$1,713	−46%
139	Lawrence O. Kitchen	LOCKHEED	103	$1,243	$2,326	−47%
140	Harvey H. Lamm	SUBARU OF AMERICA	92	$561	$1,065	−47%
141	Michael W. Wright	SUPER VALU STORES*	102	$850	$1,615	−47%
142	Thomas V. Jones	NORTHROP	96	$790	$1,524	−48%
143	C. J. Silas	PHILLIPS PETROLEUM	100	$761	$1,498	−49%
144	David T. Kearns	XEROX	95	$1,284	$2,528	−49%
145	Laurence A. Tisch	CBS	110	$1,262	$2,486	−49%
146	John F. Akers	IBM	110	$1,957	$3,879	−50%
147	Frank Shrontz	BOEING	100	$887	$1,796	−51%
148	Lawrence G. Rawl	EXXON	112	$1,872	$3,810	−51%
149	Walter L. Weisman	AMERICAN MEDICAL INT'L	92	$650	$1,352	−52%
150	Henry Wendt	SMITHKLINE BECKMAN	109	$757	$1,592	−52%
151	Francisco A. Lorenzo	TEXAS AIR*	97	$1,018	$2,240	−55%

152-161 are listed on page 89.

THE 1989 PROXY OBFUSCATION AWARD

Six of the seven Baby Bells follow Ma's lead in providing full, clear disclosure of their CEOs' salaries and bonuses. But not Bell Atlantic. Its proxy states that CEO Thomas E. Bolger earned $694,500 in "Cash Compensation" last year. That term normally comprises salary and bonus—what else would it mean?—and the proxy does not define it otherwise. Later one learns that Bolger's 1988 bonus was $592,400. Logical conclusion: His base salary was the difference, $102,100.

Logical but wrong. Intensive sleuthing through pages of gray type reveals that the bonus is not included in the cash compensation figure. To get Bolger's real cash pay, you must add the two numbers together. Total: $1,286,900.

Not every company takes the low road in proxy disclosure. AMR and McKesson both provide examples of straightforward disclosure. And Citicorp, the winner of last year's proxy obfuscation award, has cleaned up its act.

Bell Atlantic's Bolger

brings a 25% increase in pay. In last year's study the differential was only 7%, but last year that key component of New York business, the financial services industry, was grounded on the runway by a violent thunderstorm over the New York area on October 19, 1987. Today it has resumed its proud role of flying fighter cover for American executive compensation levels. Los Angeles's differential, at 21%, is nearly as great as New York's, but no other major city offers higher than average pay. San Francisco, for example, is thought to be as expensive a place to live as L.A., but there's no extra pay associated with working there. Of course, San Franciscans are not required to ante up for the gold chains and chest hair transplants that pass for haute chic in Southern California. One city does seem to qualify for a negative pay differential. That's Bentonville, Arkansas, headquarters metropolis of our best-buy CEO, Wal-Mart's Sam Walton.

All told, the above factors account for only 39% of the variation in CEO pay, the same percentage as last year. My study also considered the CEO's age and years in the top job (as opposed to total years with the company) and found they had no correlation with CEO pay.

SOME ECONOMISTS believe that even though pay and performance may not relate closely at a specific moment, there is at least a strong relation over time. Checking this study over the past two years, the conclusion is: Forget it. Among the 131 companies in both studies there is absolutely no relation between change in Performance IQ and change in CEO pay. There isn't even any relation between change in company size and change in CEO pay. So the popular notion that companies pay for growing sales, though not necessarily growing profits, is equally discredited.

The two-year data did turn up one excellent predictor of a CEO's pay in 1988: his pay in 1987. The correlation was a very high 72%, nearly twice as great as the correlation with all the combined sense-making factors cited above.

Depressing? Certainly. But if CEO pay doesn't make much sense—and in the big picture it doesn't—it's hard to blame the CEOs. Yes, they probably handpicked their companies' directors. But those directors are more likely than ever to be outsiders. Deep down inside they know how their CEO really performed, and they know their duty. It's up to them to earn their fees and do it. F

TWO TOOTHLESS PAY PLANS . . .

In pay as in all things, risk and reward should go together. But sometimes they don't. Consider:

- We all know about Pennzoil's $3 billion victory over Texaco. Pennzoil's board showed its gratitude by granting CEO J. Hugh Liedtke a $10 million one-time bonus. Nothing wrong there. He won for his shareholders, and he won for himself.

ALAN D. LEVENSON—ONYX

Northrop's Jones

ANDREW POPPER—PICTURE GROUP

Texaco's Kinnear

Now let's visit the loser's corner. Texaco has long offered key executives dividend equivalents (DEs). Each DE entitles the holder to an annual cash payment equal to the dividend on one common share. But when Texaco filed for Chapter 11 bankruptcy protection to escape, albeit temporarily, the Pirates of Pennzoil, there went the dividends.

That hurt shareholders, but Texaco's board gallantly stepped in to protect top executives. It quickly adopted a new plan, the Key Employee Retention Program, which gave executives an amount equal to approximately 90% of the aggregate DE payments they had received in 1986 and 1987. Texaco CEO James Kinnear didn't get that cash bailout—but instead was granted another 42,233 DEs, good for whenever dividends might be resumed. Now Texaco plans special dividends of $8 per share, worth another $338,000 to Kinnear. Of course he also stands to receive further compensation in future years as long as he holds the extra DEs.

- Northrop granted CEO Thomas V. Jones options on 1.2 million shares during 1985 and 1986. The exercise price was $45.88 per share, which was about the market price at the time of the grant. Since then the stock has plunged. But not to worry. Northrop's board permitted Jones, who plans to retire as CEO this year but remain chairman, to exchange his shopworn options for 1.2 million new ones with an exercise price of $29.88 per share—a potential windfall for presiding over a huge decline in the price of his company's stock.

. . . AND ONE WITH REAL RISK

The biggest news about Mike Eisner's pay isn't that $33 million option gain he took last year, but his new contract. His old agreement, due to expire next year, turned out to be one of the richest in U.S. business, but it was also among the riskiest. It froze his salary at $750,000—not a ton in Hollywood and a fraction of what he had been making at his previous employer, Paramount. Yet it also gave him 2% of all profits that exceeded a 9% return on equity, which is a percentage point above what the company was earning when he joined in 1984. And it gave him options on two million shares at the market value of $14 a share. Eisner made himself wealthy under the deal by raising ROE to 25% and the stock price to a recent $84. Investors aren't complaining.

BONNIE SCHIFFMAN—ONYX

Disney's Eisner

A declaration about the new agreement: Disney's board consulted me on it. So I'm not unbiased, but I do know how it works. Eisner's base pay will stay frozen at $750,000 a year through 1998. I don't know another major CEO who has had his salary frozen for 14 years. The threshold in his bonus formula will rise from a 9% ROE to 11%; he will still get 2% of profits above the threshold. And he gets options on another two million shares, but with a twist—1.5 million shares at $69, the market price at the time of the agreement, and 500,000 at $79 a share, a higher hurdle and a virtually unprecedented arrangement.

SO WHAT *IS* THE BEST WAY TO PAY?

Chief executives differ over that question, the latest FORTUNE 500/CNN Moneyline CEO Poll shows. But they want more emphasis on the long term.

■ *by Carrie Gottlieb*

AMERICA'S top chief executives are sharply divided over some of the most basic principles of how they are paid. Is their compensation sufficiently linked to performance? About half say yes, half no. Do big annual bonuses orient them too much toward the short term? Again the split is almost exactly even. Whatever their views on these questions, most agree that the best way to improve the way CEOs are compensated is to tie pay more closely to the company's *long-term* performance.

These findings come from the latest FORTUNE 500/CNN Moneyline CEO Poll, conducted from April 24 to May 3 by Clark Martire & Bartolomeo, an independent opinion research firm. Respondents were 214 CEOs of FORTUNE Industrial 500 and Service 500 companies.

Previous polls have shown that corporate chiefs consider short-term orientation one of the greatest dangers facing U.S. business. While they disagree about the role of annual bonuses in perpetuating it, they believe that CEO pay procedures should be changed to address the problem. Many CEOs believe their financial rewards should be based on how well they manage their companies over three to five years. They favor tying more of their compensation to stock ownership plans, which bind their interests more closely to shareholders'. A few even advocate reducing the growth of base salaries as part of this shift.

Stock options are already on the rise. A study by Towers Perrin, a major compensation consulting firm, found that options exercised by CEOs from 40 of America's largest corporations last year were almost as lucrative as salaries and bonuses combined. The average gain on exercised stock options among these chiefs was $916,936, compared with average salary and bonus totaling $1.2 million. Both forms of compensation increased substantially over 1987: Stock option gains rose 40%, while salaries and bonuses went up 14%.

The increase in option gains may just reflect CEOs' views that the stock market's strong rise since 1982 hasn't long to run, so it's time to exercise options. Or it may embody a healthy trend toward making managers more like owners. Says Marion Sandler, chief of Golden West Financial: "Most CEOs are hired guns. I think all this activity in leveraged buyouts demonstrated that they need a stake in the company." L. E. Coleman of Lubrizol, a specialty-chemicals firm, believes that executives should "receive a little more compensation from incentives and a little less from base salary. Shareholders are more comfortable knowing that management is being paid to accomplish certain goals. And that means increasing shareholder value." Ronald Haddock of American Petrofina prescribes "a substantial element of deferred compensation to be awarded as a function of earnings over five years."

"CEOs should receive a little more from incentives and a little less from base salary."

L.E. COLEMAN
Lubrizol

TAKING THE OPPOSITE view is Longview Fibre's Richard Wollenberg, a self-described iconoclast who advocates only a conservative base salary and rare year-end bonuses when the CEO has performed exceptionally well in good times or bad. Says Wollenberg: "I'm against the incentives and exorbitant salaries that executives pay themselves. People forget their fiduciary responsibility. No matter how you pay CEOs, it costs the stockholders." It's worth noting that Wollenberg and his wife own 1.8% of Longview's shares, recently worth around $15 million. Richard Zimmerman of Hershey Foods also belongs to the minority who think compensation at the top has gone too

Q **In general, is CEO pay linked to performance as much as it should be?**

A

Yes	**51%**
No	**48%**
Not sure	**1%**

Q **Do sizable annual bonuses orient a CEO too much toward the short term?**

A

Yes	**48%**
No	**47%**
Not sure	**5%**

Q **If a compensation consultant helps set CEO pay, should he be hired by the compensation committee or by the company?**

A

Committee	**66%**
Company	**17%**
Both	**3%**
No difference	**9%**
Not sure	**5%**

Q **Do you serve on the compensation committee of another company's board?**

A

Yes	**56%**
No	**44%**

"I have a private conviction that CEOs are paid too much."

RICHARD ZIMMERMAN
Hershey Foods

"Some entertainers get a windfall with a lot of hype. There's a serious double standard."

RUSSELL HANLIN
Sunkist Growers

far. He says, "I have a private conviction that CEOs are paid too much."

CEO pay, from whatever source, is far higher than ever and on average has been growing much faster than that of U.S. workers. Most CEOs defend their paychecks, sometimes citing the enormous fees earned by investment bankers and takeover attorneys. The theory goes that if these asset shufflers can make millions, certainly the chief of a major corporation—who, for example, manages 100,000 people, serves a million shareholders, and contributes something tangible to the economy—deserves to be paid accordingly. Russell Hanlin of Sunkist Growers adds another argument: "A CEO has worked a lifetime before his or her compensation gets into the high figures. Some entertainers get a windfall with little preparation and a lot of hype. We have more impact on the economy, on jobs and good wages. Yet the public seems to have a deep resentment of business and public officials who often make less extraordinary amounts. There's a serious double standard."

WHAT IS the fairest method of providing compensation? CEOs are the first to admit they are downright confused. Says Avram Goldberg of Stop & Shop: "I am leery of experts who say they have the answers. I have spent some 30 years discussing incentives—short-range, long-range, stock options, phantom options—and the longer I look at this, the more I realize there are no simple answers."

CEOs a[illegible] their pay should be based on several factors that include earnings per share, return on stockholders' equity, and how well they have weathered economic storms that were beyond their control. Beyond those generalizations, they resist formulas. Says Pfizer chief Edmund Pratt: "I've been on compensation committees of other companies, and you shouldn't try to fit CEO compensation into too narrow a standard mold. That's faulty logic." Pratt also believes that "the simpler the pay arrangements, the better. But we seem to be going in the opposite direction." Adds John Burns of Vista Chemical: "Too much compensation is based on a survey of what the other guy is earning, rather than the company's rate of return."

Wallace D. Malone Jr., head of SouthTrust Corp., offers a solution that makes sense to many of his peers: "I would divide compensation into two parts, one based on short-term performance and the other based on long-term, with more weight given to the long-term—no less than three years and no more than five years." Litton Industries' Orion Hoch advocates "a balance between short-term and long-term performance that is particular to each company's needs, and flexible enough to change with time and circumstance."

Avoiding formulas means relying on the discretion of the board's compensation committee, and with many CEOs that's just fine. A little over half of them serve on compensation committees of other companies. Says Halliburton's Thomas Cruikshank: "Restricting damage in a down market may be tougher than making money in a market that's growing. There are times when Houdini himself couldn't change a bad environment, so members of the board's compensation committee should always be aware of the problems the CEO faced and how well he performed."

Cruikshank concedes that committees aren't always so objective, but he sees that changing. Two-thirds of those polled said compensation consultants should be hired by the committee rather than by management. That arrangement, which avoids making the consultant recommend a compensation package for the man who's paying his bill, is rare today.

Shareholders are increasingly asking boards to justify executive pay. ITT's Rand Araskog says, "A compensation committee should consist of at least four people and should include active, not retired, CEOs of other companies. No one on the committee should be a personal friend or a longtime business associate of the CEO prior to becoming a member of the committee."

"I'm against the incentives and exorbitant salaries that executives pay themselves."

RICHARD WOLLENBERG
Longview Fibre

© BRUCE FORSTER

For all their differing opinions on compensation, not one CEO interviewed for this survey complained he was paid too little, though some were proud to point out that their salaries are below those of direct competitors. In general, CEOs are satisfied with their pay. Few ever switch jobs because they are offered more money. But if so many of them agree changes are in order, and are willing to link more of their pay to riskier long-term plans, shareholders may just want to take them up on the offer. ■

Q **What are the best ways to improve CEO compensation?**

A

Tie a greater portion of compensation to long-term performance	**31%**
Increase stock options	**17%**
Balance short and long-term performance	**15%**
Award "balloon payment" bonuses at the end of three to five years if goals are achieved	**7%**

Other responses include: Vary salary and bonus according to annual performance, leave annual pay to compensation committee's discretion, make no changes.

THE UNCOMMITTED CLASS OF 1989

This year's college grads aren't into permanence. They show no loyalty toward their corporate employers and expect none in return. It may be a perfect match.

■ *by Terence P. Paré*

JONATHAN LEVINE—ONYX

Shearson gets recruits everywhere from Yale to the University of Western Ontario.

WHILE THEIR baby-boomer counterparts of the 1960s sat in at universities, stood up for civil rights, and danced to the music of Sly and the Family Stone, the college class of 1989 was just learning to walk. Times a-changed. Now those who toddled in 1968 stand on the doorstep of the 1990s, mortarboard on head, tassel to the left.

These young men and women are confident, ambitious, and smart—when they applied to college their SAT scores were the highest in ten years. They are also out for themselves. Says Skip Sturman, director of career and employment services at Dartmouth: "The worst fear these kids have is commitment."

Seldom have the personal attitudes of a graduating class meshed so neatly with the needs of business. The class of 1989 is entering a corporate world that is just as averse to the "C" word. Restructuring has flattened organization charts, pared unprofitable businesses, and severed many of the ties that traditionally bound a company to its workers. Lifelong employment is now the exception; no deal is permanent. Says David L. Birch, a consultant and author of *Job Creation in America: 1985-1995*, "There is no grand design, and the kids know it."

The trick now is for graduates and those who hire them, supervise them, and work with them to acknowledge how right each is for the other. Managed with an eye toward the new realities, these graduates may end up a flexible, creative, productive work force. Managed poorly, they could sour into a generation of jaded, dissatisfied employees who skip from firm to firm taking company secrets with them as they scratch what career counselors call "the 18-month itch."

This year's graduates are birth-dearthers. They are three years younger than the last of the baby-boomers, the enormous demographic bulge of 76 million men and women born from 1946 to 1964. With the labor pool growing less rapidly, the '89ers will have no trouble finding corporate jobs. Says Princeton University sociologist Marvin Bressler: "For years employers treated employees like commodities." Now employees can treat companies like commodities.

Hiring is up in almost all industries, according to Victor R. Lindquist, director of placement at Northwestern University, who studies employment trends for college graduates in business. The most sought-after jobs are in banking, management consulting, and engineering. According to Patrick Scheetz, who conducts an annual study at Michigan State University, average starting salaries for those with bachelor's degrees nationwide will be an estimated $23,810, vs. $22,980 last year. The best paid? Chemical engineers, whose starting salaries average just over $32,000.

Jobs are one thing, careers are another. Once they pass their pre-employment physicals, the new graduates will encounter not only a corporate ladder with fewer rungs,

---

REPORTER ASSOCIATE *David Kirkpatrick*

but also aging boomers occupying every one. Says David W. Rhodes, a human resources consultant with Towers Perrin: "The big question new employees will be asking over the next few years is 'Am I going to progress quickly?' And the answer is 'No.'"

Little wonder students seem to be majoring in what Brown University career counselor Victoria Ball calls "planned indecision." True, the kids are interviewing, and true, come September, most will be working, the overwhelming majority of them in business. But nothing is final. Says Virginia Stimpson, a class marshal for Harvard's graduates: "It all seems so random. People say, 'Ah, what the hell, I'll apply for this.' And then they're hired." Ambivalence reigns. Says Dartmouth's Sturman: "The watchword on campus now is: I'm keeping my options open."

Options include more school. Applications for law school are up 18% over last year, and medical schools are seeing their first increase in applicants since 1985. The number of people taking the Graduate Record Examination, the test most graduate schools require, is over 50% higher than it was five years ago. Test taking for business school continues at record levels. Students say the increase reflects not so much passionate interest in advanced academics as a desire to put off any hard and fast career decisions. Some red-hot jobs take advantage of this wish to hang fire. Top management consulting and investment banking firms pay new B.A.s up to $50,000 a year, including bonuses. But the jobs, internships really, usually last only two years. "After that," says senior after senior, "I'll probably go to business school. After that, I'll do something else."

Companies should recognize what makes the class of 1989 different. In the past, kids fresh out of college have been bewildered, alienated, or frighteningly avaricious. Think of Dustin Hoffman in scuba gear, looking up at life from the bottom of his parents' swimming pool in the 1967 movie *The Graduate.* Or recall Charlie Sheen's lucre-loving Bud Fox, bathing in the eerie light of his Quotron late into the night in *Wall Street.* Neither image fits this class. More in the swim of things than Hoffman's Benjamin Braddock, but less bent on money than Fox, they fall somewhere in the middle.

To be sure, the graduates are not exactly indifferent to the green stuff. The winning design for the official T-shirt of Harvard's class of 1989 displays the motto GOING FOR THE GOLD on the front. The meaning becomes clear on the back, which features a big gold credit card. Every year Alexander W. Astin, a professor at UCLA's Graduate School of Education, surveys the attitudes of the incoming freshman class. He discovered that 71% of the class of 1989 believed that "being very well off financially" was extremely important, while only 43% felt that way about "developing a meaningful philosophy of life." That's a big change even from the recent past: When members of the class of 1980 were polled, about 61% were very concerned about a philosophy of life, while 53% valued being well off. Another finding: The class of 1989 had startlingly "establishment" views on crime and punishment, even though most of them probably have not read the Dostoevski novel. Woe to Raskolnikov were these students his judges. Most said that they strongly supported the death penalty. Only about 20% thought marijuana should be legalized. This year's seniors also wanted government to do more to protect the environment and the consumer.

Because it is done when students are freshmen, Astin's study does not weigh the effect of a college education. But surveys done by CollegeTrack, a New York City market research and consulting firm, paint much the same picture. According to CollegeTrack, financial security is a major goal in life for 93% of college seniors. For 75% of them, the most important factor in selecting a college course was how helpful it would be to a career. Says Stuart Himmelfarb, president of CollegeTrack: "These people have focused on themselves. They've bought into the process."

And what a process it is. A sort of theater has sprung up around the business of hiring. Both sides are playing games, only the football is a job. Feints are common. Fred Madaus, placement director at the school of business at the University of Kansas, observes that recruiters like to see candidates who are "up to the eyeballs in campus activities." The reasoning: Active people are probably well organized; good

RICHARD HOWARD

At Harvard students put a new spin on "going for the gold"...

...while at Dartmouth, the Peace Corps pitches for volunteers.

JOHN HARDING

At Berkeley the Fed beckons a backpacker to banking . . .

leaders in school are likely to make good leaders on the job; and the candidate who cares about others will be more prone to care about work. So counselors advise students to join something, anything, to list as an activity on their résumés. Cagey students oblige.

FOR STUDENTS the interview process has become less a mutual sharing of information than a rote performance. According to Valerie Dabady, a Brown senior headed for law school, the good interview becomes the one wherein you "say what the recruiter wants you to say." Hip job hunters push "talk smack," the throwaway conversation, usually about sports, that students think recruiters are addicted to. "Hockey players interview especially well," asserts Harvard senior Jennifer Samsel. "The word is investment banking recruiters love talk smack."

Companies can be equally slick. Recruiting literature understandably accentuates the positive, but often at the cost of providing more useful, honest information. Says William Corwin, assistant director of career services at Princeton: "Why can't companies just once include a picture of a guy working when it's dark outside?" In its employment literature, Saks Fifth Avenue frequently uses professional models—the kind who wear the clothes that don't fit anyone else—to represent its employees. You don't want to work with these beautiful people, you want to date them. Corwin holds up what he believes to be admirable recruiting material—no pictures, straightforward job descriptions, and salary information. It is for a Japanese company. He also commends Citicorp and Alex. Brown & Sons, the Baltimore investment bank, for their no-nonsense brochures.

What often gets lost along the way is straight talk. A senior told Merck that its low turnover rate was one of the primary reasons she signed on with the company. She also liked the pharmaceutical company's training program, figuring that it would make her a better candidate for business school in a few years—a career goal she didn't bother mentioning to Merck. Elizabeth Marsh, 21, a Princeton senior on her way to medical school, reports the advice students give each other at interview time: "Play by the rules. Tell them you love the company. Tell them you will never leave."

Employers respond in kind. William Kucker, the top recruiter for General Electric, says, "We're looking for people to make a commitment." But that company has eliminated 100,000 jobs over the past eight years. Students are quick to pick up on the contradiction. Says Barbara Waugh, Hewlett-Packard's worldwide recruiting manager: "Students are getting socialized by their schools and by the culture at large to be loyal to their own career rather than to the company." H-P, which does value employee loyalty, has a plan to counter the trend. Through its Student Employment and Education Development Program, the company identifies potential employees while they are still in college. H-P gives these students summer internships and keeps up with them during the school year by sending them company newsletters and subscriptions to technical journals.

AS HEWLETT-PACKARD'S example suggests, a company that takes the trouble to figure out what's really driving students has a better chance of finding where its interests and theirs converge. Take the matter of money. The apparent greediness of many a student may be a reaction to the enormous financial burden of a college education. Four years at an Ivy League school costs about $80,000, including books, clothes, and miscellaneous expenses. Few families can afford that kind of money without tightening belts. An otherwise flippant young man who will soon start a job in management consulting shows a touch of abashment in explaining how he financed his education. "My parents are divorced. My father is an engineer for Boeing, but he refused to help. So I worked extra, and my mom took out a second mortgage on our house."

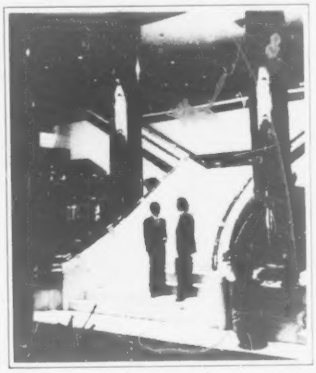
College seniors owe an estimated $10 billion in school loans, roughly what the entire country of Argentina owes to private U.S. banks. The discipline of debt is doing for graduates exactly what it is supposed to do for managers of a company leveraged to the moon in an LBO—it focuses attention on the business at hand.

But this year's group is not quite so greedy as the would-be yuppies who cakewalked to Wall Street or into corporations during the avaricious Eighties. The gradu-

. . . and at Rice University in Houston, a job fair attracts both buyers and sellers.

ZIGY KALUZNY

Welcome
to the heart
of Beijing



Hotel Beijing-Toronto is
situated in the heart of Beijing's
business and diplomatic area,
on Jianguo-Menwai Street,
10 minutes from Tian'anmen
Square, and within walking
distance from the Friendship Store.
We offer superb business and
pleasure amenities, that include
a business center, conference
rooms, and the finest Cantonese
and Continental cuisine.
Along with the unique and
hospitable personal service
that has come to characterize
Nikko Hotels International.
Where the heart is always content.

京倫飯店
Jinglun
hotel beijing-toronto
3, Jianguo-Menwai Da Jie, Beijing [illegible]
Telex 210011/210012 JLHCN [illegible] BEIJING

Managed by
nikko hotels international
[illegible]
Japan Air Lines [illegible]
Toll free in U.S. and Canada
1-800-NIKKO-US (645-5687).

ates have seen many of those who have gone before wander back to dear old Alma Mater, shellshocked from the 1987 crash, restructured into unemployment, or simply disillusioned. "I ran into a guy I know from school who had gone into investment banking a couple of years ago," says Alix Pustilnik, 21, a Columbia senior who has a public service fellowship for next year. "He was really bright. But he had been laid off. He was living at home with his parents."

It all adds up to still more confusion. Liggy Chien, 21, who just graduated from Rice University and hopes to become a business consultant, makes being very well off financially *into* a meaningful philosophy of life. Says she: "What you need to make a difference in this world is money and influence." Chuck Cattano, who thinks his Berkeley classmates still cling to ideals, says: "You have to ask yourself, 'Do I have the time to change the world?' "

Some students think they do, an impulse employers should note. Enrollment in the Peace Corps, a way station for altruistic college grads in the past, is limited by its congressionally determined budget and lingers far below the organization's heyday in the mid-1960s. But interest is up. After bottoming out in 1987 at about 10,300, applications for the Peace Corps jumped 22% in 1988. For the first three months of this year, applications are up a further 33%.

THE CORPS has learned marketing. Its projects are no longer limited to teaching English and modern agriculture in the Third World. Now a volunteer could easily be involved in developing a local bank. Promotional material includes a list of "Notable Former Peace Corps Volunteers," broken down by present employment, which would come in mighty handy if you wanted to do a little networking after finishing up your two-year stint in South America. Vivian Hunt, another Harvard class marshal, gave up a $46,000 job offer from a top consulting firm to go to Senegal as a health worker. When she returns she would like to go into business, and after that join a nonprofit agency.

The increased interest in the Peace Corps reflects a broadening of concerns among the '89ers. Practically without exception, educators say volunteer work by students is increasing. One example: The Harvard House and Neighborhood Development Program, under which each undergraduate residence sends volunteers to act as mentors and coaches to elementary school students in a local neighborhood, has grown 38% over the past year.

A can-do, want-to-do attitude like this is good news for companies. Ernest L. Boyer, president of the Carnegie Foundation for the Advancement of Teaching and author of *College: The Undergraduate Experience in America*, finds much about U.S. higher education disappointing, but he lightens the gloom when it comes to the work ethic: "Employers will be dealing with young people who want to work."

WHAT GRADUATES STUDY . . .

DISCIPLINE	DEGREES CONFERRED 1984	1989	% CHANGE
BUSINESS	244,000	255,000	+4.5%
ENGINEERING	94,000	75,000	−20.2%
COMPUTER	32,000	41,000	+28.1%
LIBERAL ARTS	19,000	21,000	+10.5%

. . . WHAT THEY EARN

DEGREE	AVERAGE ANNUAL STARTING SALARY 1984	1989	% CHANGE
ENGINEERING	$32,072	$30,600	−4.6%
COMPUTER	$29,706	$27,756	−6.6%
BUSINESS	$23,817	$25,901	+8.8%
LIBERAL ARTS	$23,114	$24,348	+5.3%

To compete in the 1990s, companies will have to find new ways to engage the energies and ambitions of their employees. Simply redoing the organization chart will not be enough. Says Jerrold Bratkovich, managing director of the Hay Group for the western region: "What is needed is a total rethinking of job design." Rosabeth Moss Kanter in her new book *When Giants Learn to Dance* suggests one idea: jobs and compensation tied to projects, and somewhat independent of the typical corporate hierarchy. Another solution: more backing for teams dedicated to innovation, whether in products or processes. Companies will have plenty of time to experiment under the combined pressures of restructured organizations and a dwindling new labor force. The population of 22-year-olds won't pick up significantly until about 2002. F

COMPETITION

EUROPE GOES WILD FOR YANKEE PCs

Shaping up for 1992, business is on a computer-buying boom. At one point Compaq Computer had to charter three cargo jets to bring in the goods.

■ *by Richard I. Kirkland Jr.*

STATION 4

From this squeaky-clean plant in Erskine, Scotland, Compaq scrambles to supply Europe.

WHAT PART of the world boasts the hottest market for personal computers? If you guessed the U.S.—and admit it, most of you did—you guessed wrong. The correct answer is Western Europe.

That's right, Europe. Gone is the mood of a few years back when French, German, and British executives phlegmatically held on to their wallets while PC fever swept America. "Now the Europeans are buying like crazy," marvels Bill Kirwin, an analyst with Gartner Group, a Connecticut-based consulting firm. Spurred mainly by the bustle to get ready for an integrated European market in 1992, sales of PCs used in business—as distinguished from cheap word processors or game-playing machines—climbed 25% in Europe last year, compared with 21% in the U.S. and 18% in Asia.

While many forecasters see growth slowing in the U.S., most think sales will remain robust across the Atlantic. Vittorio Cassoni, group managing director of Italian computer maker Olivetti, expects PC sales in Europe to rise by slightly less than 20% a year through 1992—nearly double the U.S. rate. According to Dataquest/IE, the Paris arm of the San Jose, California, market research firm, Western Europe's annual sales could surpass America's by the mid-1990s—a first in any segment of the $230-billion-a-year worldwide computer market.

If this is beginning to sound like another sad tale of lost American leadership, hold on. Five of the top seven PC sellers in Europe last year were American (see table). Should Europe emerge as the world's biggest PC market, the suppliers are bound to have a distinctly red-white-and-blue hue.

Though almost every major U.S. PC maker prospered in Europe last year, Compaq Computer of Houston went off the charts. Sales rose 151% to $734 million, and in the pre-Christmas rush the company had to charter three cargo jets to bring

PHOTOGRAPH BY PAUL LOWE—NETWORK

EUROPE'S TOP PC SELLERS

COMPANY	MARKET SHARE '88
IBM	26.6%
Olivetti	8.7%
Apple Computer	7.4%
Compaq Computer	7.1%
Hewlett-Packard	3.2%
Tandon	3.0%
Toshiba	2.6%

SOURCE: DATAQUEST/IE

parts from Texas because it couldn't book enough space on commercial flights. Predicts Eckhard Pfeiffer, a German who heads Compaq's international division: "With the sales momentum we are enjoying now, we should pass Apple and Olivetti this year to become the clear No. 2 to IBM in the European PC market."

Apple's 1988 sales nearly doubled, to $998 million. The company recently opened a research laboratory in Paris. Tandon of Moorpark, California, a onetime disk-drive maker that began selling PCs in Europe before entering the U.S. market, managed to grow fast enough to hang on to sixth place in Europe.

Even mighty IBM, whose dominant position in personal computers has been slipping at home and abroad, enjoyed at least one gratifying triumph. Its newest line of PCs, featuring IBM's proprietary microchannel architecture, proved a much bigger hit in Europe than in the U.S.

BY CONTRAST, the recent performance of Europe's homegrown PC makers has generally ranged from disappointing to disastrous. Thomson and Matra of France packed it in early this year, and in 1988 Ericsson of Sweden sold its personal computer division to Nokia of Finland. Olivetti of Italy managed to hold on to its No. 2 position behind IBM, but profits slumped badly in 1987 and were down by more than 10% last year. Mass-marketer Amstrad ran into supply problems that delayed the introduction of a new line of computers aimed at the business market. Analysts expect the company's profits to be down sharply this year.

The biggest losers weren't even PC makers. Two of Europe's computer stalwarts, Norsk Data of Norway and West Germany's Nixdorf, unexpectedly reported operating losses of more than $30 million each in 1988. Both companies make minicomputers, which have traditionally occupied the middle ground in price and performance between PCs and mainframes. But PCs designed around Intel's wildly successful 386 chip or Motorola's 68000 series chips can deliver the computing power of a mini at the price of a micro.

How will the Europeans fight back? Olivetti's Cassoni promises to be "among the first" to announce a machine based on Intel's latest superfast chip—the 486. He concedes that Olivetti lost market share when it took 18 months longer than Compaq to incorporate the Intel 386 chip into a PC. Brushing aside Compaq's plans to overtake Olivetti in Europe, Cassoni declares: "We intend to maintain our position behind IBM and to increase the gap between us and No. 3." Industry analysts are not sure whether Cassoni can do that, but they expect him to at least boost Olivetti's profits.

In such a red-hot market, any company not growing rapidly—and doing so on a Pan-European basis—risks falling behind for good. To avoid that fate a host of successful but nationally focused companies, such as Tulip Computers of the Netherlands, are rushing to open offices and expand sales across the Continent. But most are so tiny that growth alone, even at triple-digit rates, won't suffice.

That means mergers. Philips and Siemens—giants in many technologies but pipsqueaks in PCs—are acquiring smaller rivals to boost market share quickly. When Nokia paid some $210 million for Ericsson's office automation division, it instantly doubled sales of its data-processing group to a respectable $1.1 billion for 1988. Says Angela Dean, a London-based analyst with Morgan Stanley: "Over the next five years I expect to see a major restructuring of the European computer industry—done by Europeans rather than Americans."

A. CALCINAI—FORTUNE ITALIA

Olivetti's Cassoni: battling to stay No. 2

Whatever elbowroom this shakeout creates in the European market is likely to be filled by Asians. "We want to be among the top five personal computer companies in Europe by 1992," says Stan Shih, chairman and founder of Taiwan's Acer Inc. Last year Acer's European revenues hit $115 million—enough to place it in the top 25, though still some giant steps short of Shih's goal. But don't laugh. Toshiba of Japan entered the market in 1985. Since then soaring European sales of its popular laptop machine have propelled Toshiba to seventh place, according to Dataquest/IE.

SO WHO WILL BE AROUND to supply Europe's post-1992 appetite for PCs? Among Europeans, Amstrad pops up in some crystal balls, mainly because the company was successful in marketing PCs throughout Europe. Skeptics note, however, that Amstrad has yet to prove itself in the corporate market.

Other favorites include Nokia, Siemens, and, of course, Olivetti. Toshiba and a couple of other Asian companies should make the cut. But dominating the winner's circle, analysts agree, will be the same crowd standing there now—the Americans.

That prospect may depress Eurochauvinists, but it shouldn't. PCs now sell for 15% to 30% more in Europe than in the U.S. Competition and more efficient distribution should result in sharply lower prices. Foreign direct investment is sure to rise too, which means more jobs. Tandon, Compaq, Apple, and other U.S. firms are shifting more production, research, and marketing activities to their European subsidiaries. Starting next year, Toshiba plans to supply Europe from a new laptop plant under construction in Bavaria.

Finally, the European companies that survive will be far more potent global competitors than they are today. Politicians and executives who feel threatened by restructuring may complain about the bruises this messy process inevitably entails. But lower prices, more jobs, and greater global competitiveness are supposedly what Europe's rendezvous with 1992 is all about. F

REPORTER ASSOCIATE *Carrie Gottlieb*

CAN YOUR KID BECOME PRESIDENT?

Sure, ethnicity still affects advancement in the U.S. But barriers have fallen fast, and the society is wide open. It welcomes ability more than ever.

■ *by Myron Magnet*

ROSEMARY is a lovely girl, but your mother and I are a little worried. We certainly don't want any Catholic grandchildren." So Pulitzer Prize Board secretary Robert C. Christopher's father told him in a serious paternal chat about a beautiful Irish girl over 40 years ago. But now the elder Christopher has grandchildren who are half Jewish, and he will have half-Chinese great-grandchildren. Says Robert Christopher: "He's relaxed about it."

That change of heart isn't just personal: it sums up a momentous revolution in American attitudes and society. Decades in the making but accomplished with inexorable force over only the past ten or 15 years, that revolution advances by a giant step the American ideal of an open society in which people are accepted and rewarded for their own merit, talent, or hard work rather than for the accident of their birth.

For all their vastness, changes that take place quietly over a long period are hard to perceive as they occur. One aspect of the new American openness—the wholesale movement of Jews, Catholics, women, and others into seats of prominence and authority hitherto occupied largely by male WASPs—jumps sharply into focus in a new book by Christopher, *Crashing the Gates: The De-WASPing of America's Power Elite* (Simon & Schuster). And even as this book celebrates the rise of groups formerly poor and outside the mainstream, the sometimes spectacular success of America's latest wave of immigrants testifies that opportunity is even more open than earlier groups found it.

Despite the democratic traditions of this nation of immigrants, American society wasn't always wide open. Remember Groucho Marx's funny but wistful plea to the swim club that refused membership to his children: Since they were only half Jewish, he wondered, perhaps they could be allowed in up to their navels? In the Twenties, with stiff Jewish quotas the norm at elite colleges, Jewish students at Harvard had to sit in a special, segregated corner if they attended the Freshman Jubilee dance or the senior prom. Across the river in Boston at the same time, Irish visitors to grand houses were expected to use the back door. Father Andrew Greeley remembers an Irish businessman in Boston in the Fifties whose WASP colleagues, convivial enough at lunch, would not invite him to their homes or introduce him to their wives. As recently as John Kennedy's 1960 campaign, it wasn't clear that a Catholic could aspire to be President. Early in this century the California legislature made the state's many Chinese and Japanese immigrants ineligible for citizenship and denied them such basic civil rights as owning land or giving testimony in court.

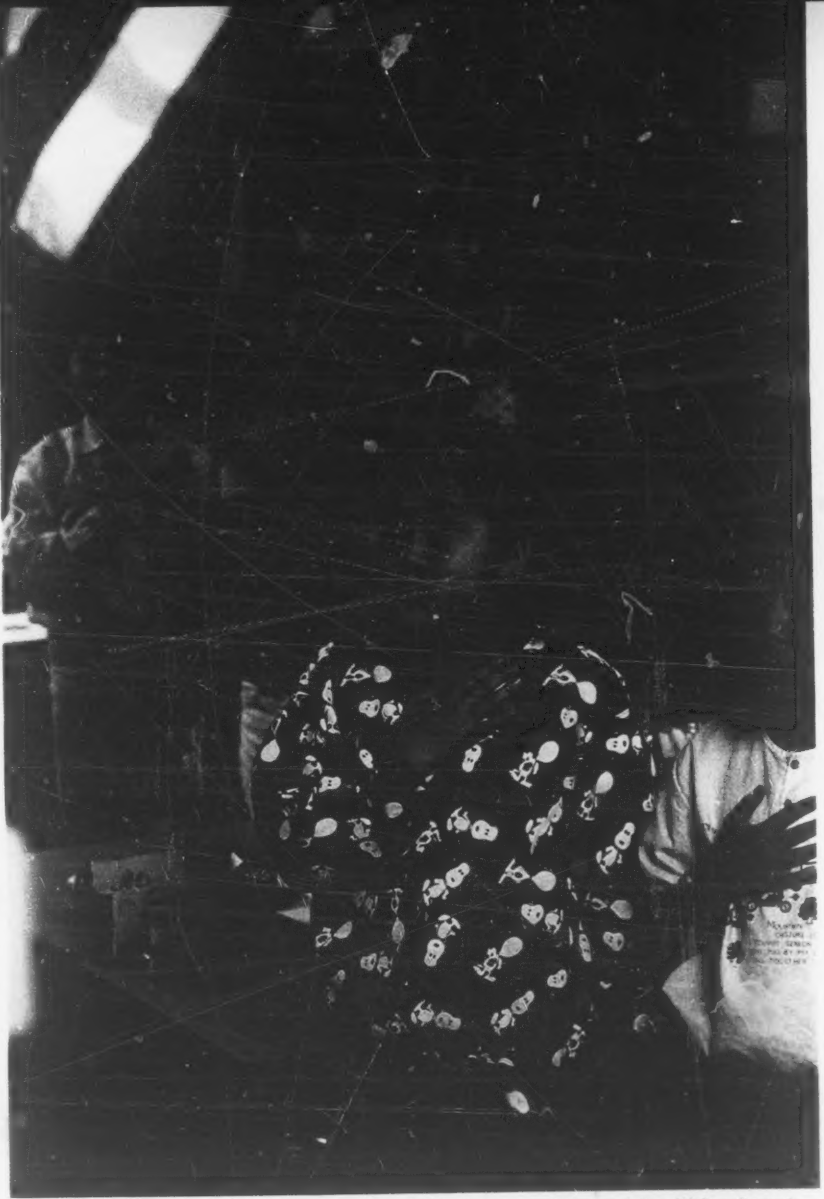
Carl Spielvogel, chairman of the Backer Spielvogel Bates Worldwide advertising agency, recalls when background and connections, as much as talent, counted for success in his industry, as in others. "In 1960 advertising was still a white-shoe business," he says. "School, school tie, and the team that you played on all meant a lot." Non-WASPs in advertising as in other businesses often assumed WASP-sounding names, manners, and tailoring, and hoped no one would guess.

Such realities—frustrating and painful at the time—might seem to younger readers as remote as the minuet or the pillory. Today when a Greek American runs for Presi-

REPORTER ASSOCIATE *Charles A. Riley II*

FORTUNE
YES, YOU CAN MANAGE FOR THE LONG TERM
You say Wall Street won't let you look past the here and now? Nonsense! You're just making lame excuses.
People weekly
CONNIE CHUNG & MAURY POVICH
A VERY CURRENT AFFAIR
The new $8 million woman of CBS News goes home at night to the brash king of tabloid TV—and they're crazy about each other. Here's one power couple who won't let work kill a fine romance
TIME
SUMMIT '87 The Word Is Go
Cosby, Inc.
Funny, Famous, Fifty—and Really Rich
FORTUNE
IACOCCA
The Lion in Winter Talks to FORTUNE: How to Handle Tomorrow's Business Challenges

You don't have to be a WASP male to make it to the top in America today, as this well-publicized crop of overachievers shows.


STEVEN SMITH

Koreans are prospering in Los Angeles, site of this classroom filled mainly with immigrants.

dent, many political pros consider his ethnicity an advantage, and Italian Catholic Geraldine Ferraro found her religion and ethnicity no hindrance in campaigning for the vice presidency. Part of the fascination of Christopher's book is his listing of non-WASPs now established in seats of power. For instance: Boschwitz, Cohen, D'Amato, DeConcini, Durenberger, Inouye, Kassebaum, Kerry, Lautenburg, Leahy, Levin, Matsunaga, Mikulski, Murkowski, Sarbanes—the roster reflects the rich variety of the American population, and is in fact a list of U.S. Senators. Blacks run two of the nation's top nonprofit organizations—Franklin Thomas at the Ford Foundation and Clifton Wharton at TIAA-CREF, the giant teachers' pension fund—and Steven Minter, who is also a black, heads the prestigious Cleveland Foundation in a city where racial and ethnic barriers until recently were quite rigid. At the hyper-Establishment Council on Foreign Relations, Greek American investment banker Peter Peterson serves as the chairman, and Peter Tarnoff, who is Jewish, is the president.

THE TOP EXECUTIVE RANKS of big corporations have similarly opened up to talented non-WASPs, especially Catholics. Two surveys by the Korn Ferry headhunting firm of 4,350 big-company executives just under the CEO level show how rapid and recent the change has been. In 1979, 68% of the executives were Protestants and 22% were Catholics; but in 1986, 58% were Protestants and 27% were Catholics. Say "big business" today, and the first face that pops into the average American's mind is likely to be Lido Iacocca's.

The extraordinary success of Jewish Americans plays an important part in the story of American openness in this century. For most Jewish Americans of Eastern European descent, that story begins in crowded urban poverty at the turn of the century, when 67% of Polish Jewish schoolchildren in major northern cities tested as "retarded." Their success in America should be seen as a proof and a promise to the many recent Cuban, Dominican, East Asian, Greek, Indian, Irish, Haitian, and other immigrants of how open to their efforts American society really is.

At the major corporate law firms on Wall Street and in Washington, D.C., for example, Smith College political scientist Stanley Rothman found that 15% of 150 partners were Catholics and 41% were Jews. So astounded was Rothman by the latter figure, especially since the firms he surveyed didn't include those that used to be thought of as "Jewish," that he went back and reconfirmed his results. And in the snootier reaches of the elite world, almost a quarter of the members of the prestigious board of New York's Metropolitan Museum of Art, for example, are Jewish.

The ultimate measure of the nation's social openness, beyond the permeability of its elites, is the intermarriage rate, which shows the degree to which people are willing not just to hire and promote but also to marry across ethnic barriers. It is startling.

In the 1980 census data, the latest available, Harvard sociologists Stanley Lieberson and Mary Waters found a striking decline in the degree to which people of the same ethnic ancestry marry each other (see graph). For example, while only 34% of married people of Italian ancestry who were 65 or older had married non-Italians, 77% of those under 25 had. Among Jews, 70% of those surveyed in Boston in 1965 opposed intermarriage for their children, but only 34% opposed it ten years later. Of non-Jews under age 30 surveyed nationwide in 1975, only 4% professed disapproval of intermarriage with Jews. By 1981 a third of third-generation Japanese Americans were marrying Caucasians, and the number of Asian-Caucasian marriages increased 70% between 1976 and 1986, leading some social scientists to foresee a substantial Eurasian component in the American middle class in the not very distant future.

What forces brought about the new American openness? As a watershed, Christopher points to the G.I. Bill, which after World War II gave a college education to thousands who otherwise would never have dreamed of higher education. The result was to swell the ranks of the trained and make the ambitious look higher. The ground had been laid long before that by the progressive effort to replace the patronage of corrupt machine politics with objective merit and so reaffirm America's original commitment to the key liberal idea of the career open to talents.

In the business world increased competition over the past 15 years has forced greater opening. Financial deregulation, global competition, and the discipline of raiders and restructuring have all raised the premium on talent and a mastery of the business rather than that on relationships.

The WASPocracy didn't have power wrested away from it, but voluntarily dispersed it. According to University of Pennsylvania sociologist E. Digby Baltzell, the WASPs waited too long to make this concession. Instead of routinely co-opting gifted outsiders into their ranks, American WASPs kept their society closed and became a caste rather than a vital aristocracy. By the time the WASPs ceded power, they and their values were enfeebled. Their new openness is part of a general "anything goes" mentality, says Baltzell. "Nobody bothers to make any distinctions anyway, so what the hell?" From a different point of view, *Commentary* editor Norman Podhoretz believes that the WASP elite has suffered a loss of confidence since the Sixties, a loss that author Christopher attributes to the failure of the primarily WASP best and brightest in directing the Vietnam war.

ONE CAN ARGUE about the timing, but, says former Harvard University dean Henry Rosovsky: "I admire the way the WASPs opened up their institutions. They did it out of a moral sense rather than being pushed into doing it. They felt it was important for the society." And sometimes they did it with panache, as when Berkshire Hathaway Chairman Warren Buffett encouraged Omaha's premier country club to drop its WASPs-only policy by joining the Jewish club instead, mildly observing that its food was better.

Bilingual education, instead of making the society more open to children of Mexican immigrants, probably keeps it more closed.

By now it is a truism that the success of America's most recent immigrants shows how breathtakingly open the society really is to ambition, hard work, and self-help. Think of the 2,800 Korean-owned businesses in Los Angeles, with schoolchildren diligently doing their homework behind the counters, or the 25,000 Cuban-owned businesses, from mom and pop stores to two major banks, in the Miami area. Think of Asians and Hispanics moving steadily out of immigrant neighborhoods into the general population as their incomes and levels of education rise.

It almost seems as if such success were easy. It is not. Taking advantage of the opportunities of the open society is a years-long struggle that commands respect. It also exacts costs, as it has from immigrants of every generation.

HARD WORK goes without saying. Acclaimed Chinese American novelist Amy Tan tells of her half-sister and her brother-in-law, both 50-ish, who arrived from China only six years ago. After four years they owned a car, three televisions, a house. They have two children in college. Since they have what some call "dead-end jobs"—she manages a takeout restaurant and he works as a dishwasher—they paid for all this by working constantly, six days a week with no vacations, and by unwavering frugality and thrift. "These accomplishments were important to them," says Tan, "as a sign that they had succeeded and that they had taken advantage of an opportunity they wouldn't have in China."

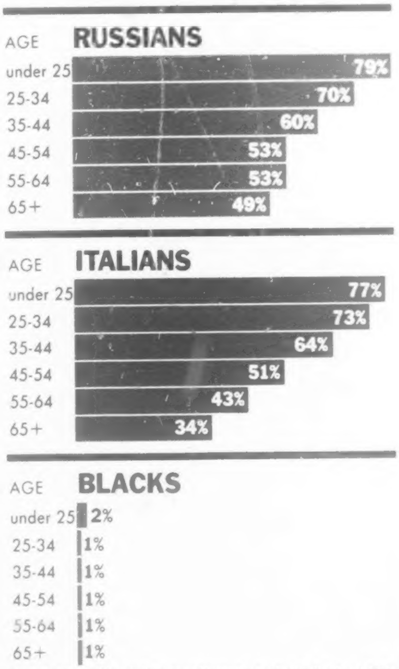
They gave up a [illegible] for that opportunity: He was a surgeon in China, she a nurse. Explains Tan: "My sister said, 'We came for the children. I know I'll never get ahead that far. I'm working hard. We're doing fine. But it's my children who are going to do well, for us.' "

And so among Chinese immigrant families, says Tan, the children take on the responsibility of working hard to achieve their parents' goals. They prosper and assimilate. Adds Tan: "That's what American society sees. What they don't see is that the immigrants who come to this country as adults do not assimilate as well as people think." After six years Tan's sister still doesn't speak English. A friend who has been in America ten years similarly hasn't learned English, and since she knows only one way to get home, she directed Tan ten miles out of the way to drive her there. Concludes Tan: "That to me was a perfect metaphor for her lack of assimilation."

Outsiders also can't perceive the emotional costs. The responsibility of achieving their parents' goals can seem a burden to children. Moreover, as with previous immigrant groups, today's immigrant parents experience their children's assimilation as both a fulfillment of their own ambitions and as a betrayal. In becoming American, the children become less . . . Chinese, Mexican, Jewish—fill in the blank. In the end, parents fear, the children become less able

LEAVING THE FOLD

Percent of U.S. ethnics who have married outside their group



SOURCE: FROM MANY STRANDS BY STANLEY LIEBERSON AND MARY C. WATERS to understand the values that support the parents' sense of their own worth.

Worse is the fear that all American parents of the Eighties share. Says John Cho, head of the Korean-American Garment Industry Association in Los Angeles: "American schoolchildren are not well disciplined. They can do whatever they want. I mean, they can hit or shoot—it's entirely beyond our imagination. Another thing is those bad habits, narcotics. It's maybe too liberated or free for anyone to have access to those kinds of things. A lot of Korean parents are worried about their children being addicted to them, and some already are."

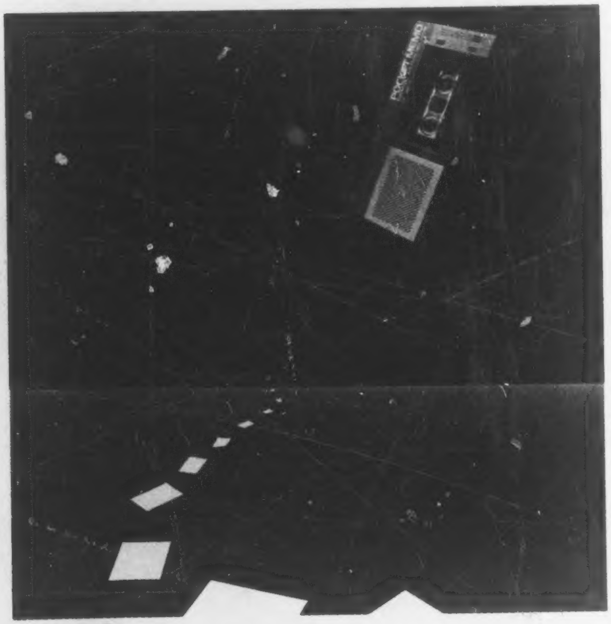
AMERICAN OPENNESS presents much the same chance to all newcomers, but different groups of immigrants have achieved different degrees of success depending on what they have brought to their opportunities. A leavening of the entrepreneurial spirit, for example, has helped make Asians and Cubans the most successful of recent immigrants. Many live in self-contained, mutually supportive, virtually self-sufficient communities—so-called enclave economies, networks of immigrant-owned businesses that buy and sell to one another and employ a significant portion of a given immigrant group. Employees, whose lack of English limits their job choices outside the enclave, often start with dirty jobs and work long hours for low wages. In return, employers are quick to promote them and often to help them if they set up businesses of their own. Sociologist Alejandro Portes of Johns Hopkins found that the usual route to starting their own businesses among Cuban refugees he studies was first working for a Cuban firm. "It's a kind of informal business school," he says.

By contrast, Mexicans, the largest recent immigrant group, are succeeding more slowly, though succeeding nevertheless. Mainly unskilled laborers without an entrepreneurial tradition, they largely have remained working class. New arrivals have found no network of welcoming employers, making lack of English a far greater hindrance for them than for Cuban immigrants. The key to their economic achievement, according to several studies, appears to be learning English, so that bilingual education, instead of making the society more open to their children, probably keeps it more closed.

Immigrants from the Caribbean are making it too—except for significant numbers of Puerto Ricans. Linda Chavez, former staff director of the U.S. Civil Rights Commission, attributes the lack of success to welfare, deeply entrenched in Puerto Rico as well as in mainland Puerto Rican communities and offering a viable if deplorable alternative to low-wage work. The result is that Puerto Ricans are being shunted aside by newer Hispanic immigrants, to whom American opportunity looks good by comparison with the situations they've left.

The unhappy example of closedness in American society has been the case of black Americans, so long excluded from full participation by barriers first of law and then of custom. But even here obstructions have crumbled and opportunities opened with amazing speed over the past three dec-

Norelco Pocket Memo - Your Electronic Notebook



You speak 7x faster than you write
So record all your notes, ideas
and correspondence on a
Norelco Pocket Memo. It's instant
and you can use it anywhere.
Norelco Pocket Memo - your
electronic notebook.

Norelco - The Dictation Specialist

For information call your office equipment dealer or send this coupon
Name
Position
Company
Address
Tel. No. AA
Philips Business Systems Company 810 Woodbury Road
Woodbury, NY 11797 Tel: (516) 921-9310 Telefax: (516) 921-9319

Norelco®

Norelco® Dictation Systems
Talk your way to the top

ades. As one luminous gauge of success, the number of black families below the poverty line declined by 5% between 1981 and 1986, while the real median income of black families rose 10%.

But success has entailed a paradoxical byproduct. As the majority of blacks rose and prospered, they fled urban ghettos for neighborhoods newly open to them, leaving behind in the inner cities an increasingly concentrated, isolated residue of the unsuccessful, who became the main component of the urban underclass. Reasonable thinkers differ on the precise pathology that created their plight, but it seems most likely that the welfare system designed to help them instead made them dependent, and a culture of poverty, which rejected the values it takes to rise out of poverty, made them emotionally and educationally unable to seize opportunities that were increasingly open. What seems unlikely, however, is that the existence of an underclass shows that America is not an open society.

Says prizewinning essayist Shelby Steele, a San Jose State University English professor who is black and who writes thoughtfully and compassionately about the condition of American blacks: "I think it takes a certain set of values and attitudes to be able to take advantage of opportunity, and those values are probably missing or undeveloped in the black underclass." Part of the problem, Steele believes, is a preoccupation with victimization and an overpowering resentment. Says he: "Black national leaders have reconvinced blacks that they're victimized. They focus on racism rather than point out to blacks their opportunities and the kinds of values it takes to exploit them."

WORSE, he believes, an emotional double bind entraps not just underclass blacks but even some—by no means all—members of the black middle class. Minority groups have always felt ambivalent about joining the American mainstream because they have feared they would lose a portion of their original identity. Still, they have entered fully. But among blacks the ambivalence sometimes seems even stronger, more lopsided, more incapacitating. Explains Steele: "The kind of black identity that emerged in the Sixties was focused around victimization: The proud black man was basically a poor, ghettoized black person. And so black middle-class people, in order to achieve their identity, had to identify with that, even though it was a contradiction to the reality of their lives, their aspirations, their opportunities. That tension held the black middle class back. You may be middle class, but if you're encouraging your children to be black and identify with the mass of black people, you're conditioning them to be poor, to not subscribe to the same values that you yourself are living by." Little wonder, says Steele, that such children sometimes fall out of the middle class.

After enormous progress, the barriers that most hinder social mobility in America today are in the minds of citizens, not in the society at large. The right message for all is: Most doors are wide open in America now. He may walk through who will.

The Pageant of Classical China at Taipei's Most Exquisite Hotel

The Howard Plaza preserves all the luxuries of classical China: decor, comfort, and cuisine. Deluxe accommodations mean hand-carved rosewood furniture and original contemporary paintings in all guest rooms. In addition to business and fitness centers, a swimming pool, and 10 food and beverage outlets, the Howard is located in eastern Taipei's sparkling commercial and residential area. Whether in town for business or pleasure, your stay will be distinct with the personalized hospitality of which imperial legends are made.

福華大飯店 TAIPEI
Howard Plaza Hotel
160 Jen Ai Road, Sec. 3, Taipei, Taiwan, R.O.C. Tel: (02)700-2323
Fax: 886-2-705-2803 Tlx: 10702 HOPLATEL TAIPEI

For reservations and information, please contact any KLM Golden Tulip Worldwide Hotel, Distinguished Hotels of the World, Utell International or Supereps International. An associate of the Keio Plaza Hotels, Japan.

FORTUNE

THE SERVICE

CONTENTS

At Last, Profits Worth Savoring 352

The FORTUNE 500 Largest Service Corporations 358

Definitions and Explanations 388

Industry Medians 388

Arrivals, Departures, and Money Losers 389

Alphabetical Index to the Service 500 390

AT LAST, PROFITS WORTH SAVORING

They're back, more robust than in several years. Did America's biggest service companies—the FORTUNE Service 500—respond to an inner cry? "Hey, folks, there's an industrial boom out there, and someone's gotta do the shipping, the selling, and the all-purpose sweating to make it work." Whatever the inspirational voice, service enterprises were listening. Companies on this year's Service 500 roster netted a record $73.8 billion in 1988, 55% more than those on last year's lists. (The calculation excludes the net income of life insurers, which do not account for profits on a comparable basis with other companies.)

A spectacular rebound by commercial banks accounted for most of the gain. Their earnings hit new highs after huge write-offs on Third World loans in 1987, when 26 of the top 100 banks lost money, vs. only three on this year's list. On the banks' heels came the dazzling performance of many railroads, telecommunications outfits, retailers, waste processors, Wall Street firms bucking hard times, and healthy savings institutions. Only the utilities group, dragged down by nuclear woes at a handful of power companies, suffered an overall decline in profits. Not bad when you consider that the Service 500 as a whole registered a 22% earnings *drop* in 1987.

Transportation companies delivered a thumping 50% increase in profits. Airlines, enjoying an armistice in their competitive wars, raked in higher fares. UAL (No. 2 on the transportation list) shed

Norfolk Southern's profits highballed last year. In an Atlanta yard, cranes double-stack trains with steamship containers.

NS
NORFOLK SOUTHERN
APC
48
APL

	1988 $ BILLIONS	1987 $ BILLIONS	CHANGE
100 DIVERSIFIED SERVICE COMPANIES	$6.344	$5.241	21.0%
100 COMMERCIAL BANKING COMPANIES	$17.501	($5.310)	–
50 DIVERSIFIED FINANCIAL COMPANIES	$12.587	$12.081	4.2%
50 SAVINGS INSTITUTIONS	$1.198	$0.990	21.0%
50 LIFE INSURANCE COMPANIES*	$5.668	N.A.	N.A.
50 RETAILING COMPANIES	$9.116	$8.282	10.1%
50 TRANSPORTATION COMPANIES	$5.476	$3.644	50.3%
50 UTILITIES	$21.592	$22.722	(5.0%)

*Net income based on statutory accounting. N.A. Not available.

some routes and its Westin Hotel business, revived its old name (bye-bye, Allegis), and lifted earnings 236% despite an 18% decline in revenues. A bigger story unfolded on the ground, where railroads and truckers hauled tonnage to keep busy factories producing and exporting. As the result of an extensive restructuring program at Norfolk Southern (No. 12), the railroad company transformed a modest 9% increase in revenues into a 268% jump in profits. The return on stockholders' equity, thin as a split rail in 1987, fattened to a respectable 12.3%.

Diversified service companies chalked up a 21% rise in earnings. MCI, the long-distance phone company whose profits disappeared in 1986, reveled in a 293% leap on a 30% rise in revenues. With new services and expanded international direct dialing, the company continues to eat into archrival AT&T's business. MCI's shares more than doubled in price, and the company jumped from No. 43 among utilities to No. 7 on the diversified service list.

Retailers, maintaining the momentum of 1987, boosted overall profits 10%. Seemingly unstoppable Wal-Mart moved up a couple more rungs to No. 3, turning in the consistently good performance we've come to expect of Mr. Sam's troupe, with net rising 33% and sales up 29%. But a lesser-known discount merchant walked off with the most improved award. Service Merchandise (No. 32), a Nashville-based catalogue showroom that earlier ran into heavy costs from hasty expansion, roared back with a 148% rise in earnings on a 14% increase in sales. Nobody was more pleased than the stockholders, who enjoyed a total return (capital appreciation plus dividends) of 415%—best on the Service 500 list.

The retail group's median return on stockholders' equity, much enhanced by borrowing, hit an impressive 16.3% last year. But by leveraging up heavily with junk debt, some storekeepers have given bondholders reasons to feel jittery. Coupon clippers watched closely as eccentric Canadian magnate Robert Campeau, striving to pare a huge debt load, continued to auction off chunks of Allied Stores (No. 33) and Federated Department Stores (No. 23) to

OVAK ARSLANIAN—GAMMA LIAISON

such fellow merchants as May Department Stores (No. 9).

After 1987 write-offs that put the banks on last year's list $5.3 billion in the red, the group zoomed back in 1988—and how! Their $17.5 billion in profits dwarfed the previous peak of $11 billion in 1986. Credit these results to the steadily expanding economy, which has sustained vigorous commercial and consumer borrowing, and to the banks' streamlined operations. Even BankAmerica (No. 3), a money loser for three years straight, returned to the black with an 18% return on stockholders' equity, bringing investors a 156% gain.

Top-ranked Citicorp alone, with earnings of $1.9 billion, accounted for 11% of the group's total. Bank of New York, victorious in its hotly contested 13-month battle to take over Irving Bank, moved up from No. 28 to No. 10. But size is no guarantee of profitability. The merged bank ranked only 84th by a key measure, return on year-end assets, with a mere 0.4%. Bank of New York plans to cut 17% of its work force, aiming for savings of $700 million over the next five years. The winner and runner-up in return on assets last year were New York's European American Bank with 1.8% and Milwaukee's Firstar Corp. with 1.7%.

Diversified financial companies achieved diverse results. Thanks to stunning performances by such big players as American Express and American International Group, which offset a bunch of declines, total profits climbed 4%. Some Wall Street houses coined money as if Black Monday had never occurred, grasping fat fees for advice on mergers and pocketing profits from merchant banking deals. Morgan Stanley (No. 9) netted $395 million, nearly double what it earned in heady 1986. And that's after paying out over $1 billion in salaries and other compensation—a dazzling aver-

KEY TO RANK

	PAGE
B - COMMERCIAL BANKING COMPANIES	364
F - DIVERSIFIED FINANCIAL COMPANIES	370
I - SAVINGS INSTITUTIONS	372
L - LIFE INSURANCE COMPANIES	376
R - RETAILING COMPANIES	378
S - DIVERSIFIED SERVICE COMPANIES	358
T - TRANSPORTATION COMPANIES	382
U - UTILITIES	384

THE TEN LARGEST INCREASES IN SALES

	RANK	
VONS COS.	R-27	831.2%
SOUTHMARK	F-29	226.9
UNITED TELECOMMUN.	S-6	169.9
AMERICAN FINANCIAL	S-5	154.9
TONKA	S-96	137.2
ITT	F-8	126.3
GENERAL CINEMA	R-43	120.7
USAIR GROUP	T-8	90.2
LOMAS & NETTLETON	F-35	90.1
LANDMARK LAND	F-40	82.9

THE TEN LARGEST INCREASES IN PROFITS*

BANKERS TRUST N.Y. CORP.	B-9	54,932.5%
SECURITY PACIFIC CORP.	B-5	3,969.4
RIGGS NATIONAL CORP.	B-70	3,554.1
ILLINOIS CENTRAL GULF R.R.	T-36	2,960.0
STATESMAN GROUP	F-44	2,188.7
AMERICAN CAPITAL CORP.	I-27	2,049.7
ENRON	U-27	1,829.7
BANK OF BOSTON CORP.	B-14	1,539.3
UNIVAR	S-81	1,467.8
MANUF. NATIONAL CORP.	B-48	1,351.6

*Excludes companies that lost money in 1987.

THE TEN LARGEST DECREASES IN SALES

	RANK	
FEDERATED DEPT. STORES	R-23	59.1%
CAPITAL HOLDING	F-22	38.9
DCNY	F-45	35.8
BURLINGTON NORTHERN	T-11	29.0
NATIONAL INTERGROUP	S-24	26.1
SAFEWAY STORES	R-7	25.6
ALLIED STORES	R-33	24.7
HOUSEHOLD INTERNATIONAL	F-16	23.3
GENERAL RE	F-28	20.7
UAL	T-2	18.4

THE FIVE LARGEST DECREASES IN PROFITS*

PERMIAN PARTNERS	S-36	1397.1%
GOLDOME	I-11	813.7
FIRST BANK SYSTEM	B-29	725.0
WESTERN S&L ASS'N	I-33	703.9
ENSERCH	S-31	646.0

*Decreases over 100% reflect swings from 1987 profits to 1988 losses.

THE FIVE LARGEST LOSSES

		$ MIL.
AMERICAN TEL. & TEL.	S-1	$1,669.0
LONG ISLAND LIGHTING	U-29	1,046.6
MCORP	B-38	940.0
TEXAS AIR	T-5	718.6
DETROIT EDISON	U-24	378.8

THE TEN HIGHEST TOTAL RETURNS TO INVESTORS, 1988

	RANK	
SERVICE MERCHANDISE	R-32	414.6%
BANKAMERICA CORP.	B-3	156.4
MCI COMMUNICATIONS	S-7	141.3
KROGER	R-4	123.8
FIRST MARYLAND BANCORP	B-79	107.0
UNITED TELECOMMUN.	S-6	98.6
MIDDLE SOUTH UTILITIES	U-13	96.4
COMMERCE BANCSHARES	B-88	95.7
COSTCO WHOLESALE	R-47	92.4
TW SERVICES	R-30	85.2

THE FIVE LOWEST

AMERICAN CARRIERS	T-42	(82.2)
MAXICARE HEALTH PLANS	S-49	(78.6)
MCORP	B-38	(73.7)
WESTERN S&L ASS'N	I-33	(72.7)
SOUTHMARK	F-29	(64.9)
THE SERVICE 500 MEDIAN		18.3

THE TEN HIGHEST TOTAL RETURNS TO INVESTORS, 1978–88 ANNUAL AVERAGE

	RANK	
THE LIMITED	R-25	47.2%
WAL-MART STORES	R-3	47.0
TELE-COMMUNICATIONS	U-28	46.7
GIANT FOOD	R-34	42.0
TOYS "R" US	R-26	41.8
STATE ST. BOSTON CORP.	B-64	40.5
DCNY	F-45	39.1
MCI COMMUNICATIONS	S-7	37.5
DILLARD DEPT. STORES	R-37	37.1
FOOD LION	R-28	36.5

THE FIVE LOWEST

MCORP	B-38	(22.8)
GIBRALTAR FINANCIAL CORP.	I-10	(17.8)
TRANSCON	T-45	(12.5)
CONTINENTAL BANK CORP.	B-17	(11.1)
FINAN. CORP. OF S. BARBARA	I-39	(10.6)
THE SERVICE 500 MEDIAN		18.4

THE MOST PROFITABLE 1988

THE TEN HIGHEST RETURNS ON STOCKHOLDERS' EQUITY

	RANK	
SERVICEMASTER	S-57	125.7%
MONTGOMERY WARD HOLDING	R-19	93.3
UAL	T-2	91.7
TIGER INTERNATIONAL	T-22	57.4
CBS	S-33	51.5
CHARTER	S-94	39.5
MARSH & MCLENNAN COS.	F-49	39.2
LANDMARK LAND	F-40	33.0
ALLIED STORES	R-33	32.9
MARRIOTT	R-14	32.7
THE SERVICE 500 MEDIAN		13.0

THE TEN HIGHEST RETURNS ON ASSETS

	RANK	
CBS	S-33	26.1%
CHARTER	S-94	19.9
KELLY SERVICES	S-67	18.5
UAL	T-2	16.8
MARSH & MCLENNAN COS.	F-49	16.2
GENUINE PARTS	S-30	15.9
NIKE	S-73	14.3
ALEXANDER & BALDWIN	T-30	14.3
SERVICEMASTER	S-57	13.4
WAL-MART STORES	R-3	13.2
THE SERVICE 500 MEDIAN		1.1

THE TEN HIGHEST RETURNS ON SALES

	RANK	
CBS	[illegible]	41.4%
ALEXANDER & BALDWIN	[illegible]	21.9
ARGONAUT GROUP	[illegible]	20.2
GENERAL RE	[illegible]	17.5
PHILADELPHIA ELECTRIC	[illegible]	17.5
BALTIMORE GAS & ELECTRIC	[illegible]	16.3
PRIMERICA	[illegible]	16.1
TEXAS UTILITIES	[illegible]	15.5
WALT DISNEY	[illegible]	15.2
DUKE POWER	[illegible]	15.2
THE SERVICE 500 MEDIAN		3.8

age of $162,000 per employee. The company's 25% return on equity was bolstered by a $124 million pretax gain from selling its stake in Cain Chemical. As investment banker, Morgan had worked with Texas dealmaker Gordon Cain when he put the firm together from several companies' petrochemical operations in 1987.

The diversified financial companies' *median* profits are another story. They slipped by 3.1%, partly beaten down by slumps in the property-casualty insurance and reinsurance businesses. Among brokerage houses, the legacy of the crash lived on. Average daily trading volume declined 15% on the Big Board last year, pinching commissions at firms like Paine Webber (No. 18), where earnings fell 41%.

Savings institutions present a paradoxical picture. Most on this year's list endured declining profits or losses as the thrift industry's malaise kept on spreading. Overall profits, at $1.2 billion, were less than half the figure of two years ago. Yet they were *up* 21% over 1987 because some of the heaviest losers disappeared from this year's lineup. Biggest dropout: Financial Corp. of America, formerly No. 1 among publicly held thrifts. Wheeler-dealer Robert Bass took over the company's troubled American Savings subsidiary. All was not woe. Some of the largest savings institutions, such as H.F. Ahmanson (the new No. 1) and Great Western Financial (No. 2), did just fine.

Utility profits sagged by 5% in 1988. GTE and most of the Baby Bell regional telephone companies boosted earnings, but this was offset by a dismal showing in the energy sector. Long Island Lighting Co., stuck with its new Shoreham nuclear reactor after local opposition blocked its use, took a loss of more than $1 billion. Other companies also experienced pains. An accounting credit for funds used during construction made up 57% of Detroit Edison's profits in 1987. The discontinuance of that credit helped put the company $379 million in the red last year.

The Service 500 has some notable newcomers. Obeying a mandate of the Financial Accounting Standards Board, corporations consolidated the results of all majority-owned subsidiaries with those of their other operations. *Voilà*: ITT, No. 45 on the FORTUNE 500 Industrials last year, arrives at No. 8 on the diversified financial list. Perhaps better known for making such industrial items as antilock braking systems and defense communications equipment, ITT actually draws over half its revenues from insurance, finance, and hotels.

Other companies switched lists simply because their sales from service businesses came to eclipse those from manufacturing. AT&T, formerly No. 8 among industrial companies, pulled in more money from providing phone service than from making computers and telecommunications equipment. It rejoins the Service 500, at the top of the diversified service list, for the first time since it was broken up in 1984.

– Alan Deutschman and Karen Nickel

THE [illegible]

THE TEN HIGHEST IN SALES PER EMPLOYEE

	RANK	$ THOU.
CHARTER	S-94	$18,611.7
FED. NAT'L MORTGAGE ASS'N	F-2	4,254.0
BINDLEY WESTERN INDUST.	S-65	3,372.9
UNION EQUITY CO-OP. EXCH.	S-59	2,471.8
PERMIAN PARTNERS	S-36	1,634.8
SUBARU OF AMERICA	S-48	1,478.1
STUDENT LOAN MKTG. ASS'N	F-13	1,474.6
AMERICAN CARRIERS	T-42	1,297.3
IND. FARM BUREAU COOP.	S-83	1,285.2
BALFOUR MACLAINE	S-87	1,281.4
THE FIVE LOWEST		
MARRIOTT	R-14	$32.1
TW SERVICES	R-30	29.8
OGDEN	S-84	29.4
HILTON HOTELS	S-91	25.1
BEVERLY ENTERPRISES	S-42	19.1
THE SERVICE 500 MEDIAN		171.3

THE TEN HIGHEST IN SALES PER DOLLAR OF STOCKHOLDERS' EQUITY

	RANK	
HAL	T-44	$78.38
TURNER	S-26	66.24
MAYFLOWER GROUP	T-33	51.68
SSC HOLDINGS	R-22	40.18
ROUNDY'S	S-41	37.65
MONTGOMERY WARD HLDG.	R-19	36.05
APL	S-72	35.12
BALFOUR MACLAINE	S-87	33.82
SERVICE MASTER	S-57	29.78
BINDLEY WESTERN IND.	S-65	28.28
THE FIVE LOWEST		
MIDDLE SOUTH UTILITIES	U-13	$0.68
GULF STATES UTILITIES	U-37	0.65
ILLINOIS POWER	U-40	0.58
PRIMERICA	F-19	0.52
OVERSEAS SHIPHLDG. GROUP	T-46	0.44
THE SERVICE 500 MEDIAN		3.01

5

THE SERVICE 500

THE 100 LARGEST

SERVICE

RANK BY SALES 1988	1987	COMPANY	SALES $ Millions	% change from 1987	PROFITS $ Millions	Rank	% change from 1987	ASSETS $ Millions	Rank	STOCKHOLDERS' EQUITY $ Millions	Rank
1	●	**AMERICAN TELEPHONE & TELEGRAPH** New York	35,210.0	4.8	(1,669.0)	91	(181.7)	35,152.0	1	11,465.0	1
2	2	**FLEMING COS.** Oklahoma City	10,467.0	21.6	65.4	34	32.1	2,559.0	31	633.8	35
3	1	**SUPER VALU STORES** Eden Prairie, Minn.	9,371.7	3.4	111.8	22	25.2	2,016.2	38	677.4	32
4	3	**MCKESSON** San Francisco	7,297.7	9.4	95.0	28	5.9	2,254.7	33	703.3	28
5	●	**AMERICAN FINANCIAL** Cincinnati	6,901.7	154.9	102.4	26	(19.1)	11,669.8	2	324.5	52
6	●	**UNITED TELECOMMUNICATIONS** Westwood, Kans.	6,493.0	169.9	508.9	3	–	9,816.9	3	1,877.2	9
7	●	**MCI COMMUNICATIONS** Washington	5,137.0	30.4	346.0	9	293.2	5,843.0	6	1,359.0	14
8	10	**FLUOR** Irvine, Calif.	5,132.5	30.8	56.4	41	112.1	2,073.3	37	601.7	36
9	5	**RYDER SYSTEM** Miami	5,029.6	9.1	197.2‡	13	5.4	6,038.8	5	1,589.2	12
10	18	**HALLIBURTON** Dallas	4,838.7	43.7	93.6	29	94.6	4,722.2	14	2,107.2	7
11	7	**CAPITAL CITIES/ABC** New York	4,773.5	7.5	387.1	6	38.7	6,088.9	4	3,025.5	2
12	8	**ELECTRONIC DATA SYSTEMS** Dallas	4,744.6	9.7	384.1	8	18.9	3,416.0	26	1,403.9	13
13	12	**SYSCO** Houston	4,384.7	19.9	86.9	31	40.6	1,020.9	57	543.6	40
14	19	**DUN & BRADSTREET** New York	4,267.4	27.0	499.0	4	27.0	5,023.8	11	2,093.2	8
15	11	**WETTERAU** Hazelwood, Mo.	4,155.9	8.2	38.6	48	10.1	798.8	65	213.9	62
16	4	**HOSPITAL CORP. OF AMERICA** Nashville	4,111.2	(12.1)	258.8	10	–	5,388.3	7	1,617.5	11
17	9	**ARA GROUP** Philadelphia	3,917.3	(2.5)	5.4	69	(75.1)	1,771.5	44	(6.0)	96
18	13	**ALCO STANDARD** Valley Forge, Pa.	3,809.6	5.3	110.0	23	37.2	1,399.0	48	658.8	33
19	26	**WASTE MANAGEMENT** Oak Brook, Ill.	3,565.6	29.3	464.2	5	41.9	4,878.5	13	2,179.2	6
20	16	**BERGEN BRUNSWIG** Orange, Calif.	3,486.4	3.3	34.7	50	1[illegible]8.6	888.7	63	219.4	60
21	20	**WALT DISNEY** Burbank, Calif.	3,438.2	9.5	522.0	2	17.4	5,108.9	9	2,359.3	3
22	22	**HUMANA** Louisville, Ky.	3,435.4	21.3	227.1	11	24.2	3,422.0	25	1,154.6	15
23	32	**GREYHOUND** Phoenix	3,373.8	49.3	104.1	25	314.5	5,033.9	10	1,002.1	18
24	6	**NATIONAL INTERGROUP** Pittsburgh	3,355.3	(26.1)	(21.9)	78	–	1,922.6	40	707.7	27
25	17	**NATIONAL MEDICAL ENTERPRISES** Los Angeles	3,202.2	(5.0)	147.6	17	134.3	3,507.2	22	962.0	20
26	24	**TURNER** New York	3,195.8	14.5	3.7	70	–	920.3	61	48.2	92
27	28	**AMERICAN MEDICAL INT'L** Beverly Hills	3,111.5	15.1	115.3‡	20	9.4	3,532.2	21	888.7	21
28	21	**GULF & WESTERN** New York	3,055.9	5.2	384.7	7	8.0	5,378.1	8	2,266.2	4
29	30	**MCA** Universal City, Calif.	3,023.7	16.8	164.9	16	20.2	4,115.0	18	1,6[illegible]1.7	10
30	29	**GENUINE PARTS** Atlanta	2,942.0	12.9	181.4	14	22.3	1,141.3	52	863.2	22
31	23	**ENSERCH** Dallas	2,895.0	3.5	(166.4)	89	(646.0)	2,970.1	29	738.5	26
32	27	**ASSOCIATED MILK PRODUCERS** San Antonio	2,827.2	2.6	N.A.		–	488.8	76	139.7	77
33	25	**CBS** New York	2,777.7	0.6	1,149.9	1	154.1	4,407.1	15	2,208.0	5
34	41	**CASTLE & COOKE** Los Angeles	2,469.2	41.2	112.3	21	33.4	1,922.2	41	742.5	25
35	●	**HARVEST STATES COOPERATIVES** St. Paul	2,426.3	31.0	N.A.		–	507.2	74	161.2	71
36	●	**PERMIAN PARTNERS** Houston	2,288.7	(11.2)	(14.7)	76	(1,397.1)	554.6	72	218.1	61
37	37	**MORRISON KNUDSEN** Boise, Idaho	2,142.9	14.9	(127.1)	88	–	745.6	66	224.3	59
38	36	**NASH-FINCH** St. Louis Park, Minn.	2,091.8	9.0	18.2	62	(1.8)	388.3	84	151.0	73
39	46	**BROWNING-FERRIS INDUSTRIES** Houston	2,067.4	24.8	226.9	12	31.9	2,258.1	32	1,043.5	16
40	43	**ALCO HEALTH SERVICES** Valley Forge, Pa.	2,058.6	18.8	20.2	61	12.3	457.0	78	195.0	64
41	42	**ROUNDY'S** Pewaukee, Wis.	2,036.5	17.1	N.A.		–	316.9	91	54.1	90
42	35	**BEVERLY ENTERPRISES** Pasadena, Calif.	2,025.0	(3.3)	(23.9)	79	–	1,843.5	42	545.5	39
43	38	**HERTZ** Park Ridge, N.J.	1,966.5	5.6	80.4	32	48.9	3,370.8	27	677.5	31
44	44	**BALLY MANUFACTURING** Chicago	1,867.3	11.4	38.0	49	(33.5)	2,866.6	30	581.5	37
45	48	**AVNET** New York[10]	1,817.2	18.1	52.2	42	128.9	1,152.6	51	696.0	29
46	51	**REEBOK INTERNATIONAL** Canton, Mass.	1,785.9	28.6	137.0	18	(17.1)	1,063.4	55	690.7	30
47	●	**HARCOURT BRACE JOVANOVICH** Orlando, Fla.	1,782.1	38.0	(53.5)	83	(159.1)	3,232.5	28	(1,398.4)	99
48	40	**SUBARU OF AMERICA** Cherry Hill, N.J.	1,673.2	(6.3)	(57.9)	84	–	727.7	67	209.8	63
49	39	**MAXICARE HEALTH PLANS** Los Angeles	1,670.0	(7.4)	(267.8)	90	–	N.A.		N.A.	
50	58	**ITEL** Chicago	1,643.6	29.0	24.8	56	198.8	4,000.9	19	784.4	24

● Not on last year's list.

† Average for the year; see the reference to "employees" on page 388.

‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and "earnings per share" on page 388.

N.A. Not available.

§ Dividends paid on mandatory redeemable preferred stock subtracted from profits.

Net sales include all operating revenues and revenues from discontinued operations when they are published. All figures are for the fiscal year that ended December 31, 1988, unless otherwise noted. Sales of subsidiaries are included when they are consolidated. All companies on the list must have derived more than 50% of their revenues from nonmanufacturing and/or nonmining businesses. Excluded (but eligible for the lists that follow) are

DIVERSIFIED SERVICE COMPANIES

MARKET VALUE		NET PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1987	1978-88 annual growth rate				1978-88 annual average				
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$		%	Rank	1988 %	Rank	%	Rank	Number	Rank	
37,309.9	1	(4.7)	85	(4.7)	85	(14.6)§	79	(1.55)	(182.4)	—		14.8	51	13.0	54	304,700	1	1
1,010.8	36	0.6	68	2.6	54	10.3	53	2.43	30.6	7.6	32	32.6	33	20.1	30	24,600	23	2
1,877.4	23	1.2	58	5.5	30	16.5	26	1.50	25.0	13.5	19	39.9	25	23.0	23	35,595	20	3
1,348.8	29	1.3	56	4.2	42	13.5	39	2.23	7.7	3.2	45	22.5	41	19.2	37	16,700	34	4
N.A.		1.5	54	0.9	66	24.4§	10	N.A.	—	—		—		—		52,000	8	5
5,858.2	8	7.8	12	5.2	31	26.9§	5	4.95	—	6.7	38	98.6	2	18.5	38	37,661	16	6
8,215.0	5	6.7	16	5.9	28	25.5	7	1.23	296.8	35.8	1	141.3	1	37.5	1	17,778	30	7
1,956.5	22	1.1	59	2.7	51	9.4	58	0.71	115.2	(7.5)	57	70.2	8	10.4	61	17,876	29	8
1,993.4	21	3.9	31	3.3	48	12.4	44	2.40	4.8	9.1	29	0.2	70	17.6	40	45,144	11	9
3,338.3	12	1.9	52	2.0	58	(0.6)§	71	0.89	97.8	(12.5)	59	17.1	48	2.3	67	61,400	7	10
7,467.4	6	8.1	10	6.4	27	12.8	42	22.31	35.5	19.4	7	5.1	64	25.0	18	19,720	26	11
N.A.		8.1	11	11.2	9	27.4	4	N.A.	—	—		—		—		50,407	9	12
2,064.3	19	2.0	51	8.5	15	16.0	29	1.94	38.6	18.4	10	43.4	22	30.7	4	13,000	43	13
10,032.9	4	11.7	6	9.9	13	23.8	12	2.67	3.5	15.5	17	1.1	68	23.8	21	69,500	5	14
611.3	49	0.9	63	4.8	34	18.0	21	1.58	12.1	7.3	36	44.3	19	19.9	32	13,697	41	15
N.A.		6.3	18	4.8	35	16.0	28	3.62	—	16.3	15	44.2	20	17.4	42	63,000	6	16
N.A.		0.1	71	0.3	72	—		N.A.	—	—		—		—		120,000	2	17
1,162.5	33	2.9	39	7.9	16	16.7	25	2.33	28.7	7.5	34	40.6	24	21.4	27	16,000	36	18
10,717.0	3	13.0	4	9.5	14	21.3	15	1.76	20.5	23.7	3	11.2	56	35.6	2	36,750	19	19
510.5	53	1.0	61	3.9	46	15.8	30	1.89	117.6	18.5	9	58.1	10	29.0	8	3,645	70	20
11,333.9	2	15.2	2	10.2	11	22.1	13	3.80	17.6	17.5	11	11.7	55	22.4	25	39,000	13	21
3,016.6	14	6.6	17	6.6	23	19.7	19	2.30	23.7	25.6	2	36.5	29	23.5	22	49,400	10	22
1,227.8	31	3.1	37	2.1	56	10.3§	54	2.70	335.5	7.3	35	23.0	40	17.2	43	37,244†	17	23
385.0	57	(0.7)	77	(1.1)	76	(3.9)§	72	(1.27)	—	—		45.8	17	(1.4)	70	7,204	54	24
2,225.6	18	4.6	27	4.2	43	15.3	32	1.99	139.8	17.5	12	17.4	47	20.5	29	71,600	4	25
79.9	76	0.1	72	0.4	71	7.6	62	0.82	—	(0.3)	53	11.8	54	16.5	44	3,500	72	26
1,481.3	27	3.7	33	3.3	49	13.0	41	1.41‡	17.5	7.2	37	29.4	36	9.5	62	32,000†	22	27
6,258.9	7	12.6	5	7.2	21	16.9§	24	3.21	11.5	8.6	31	16.2	49	25.9	15	19,500	27	28
4,025.7	11	5.5	22	4.0	45	9.7	57	2.26	24.2	2.1	48	33.7	32	15.2	49	17,700	31	29
3,065.2	13	6.2	20	15.9	4	21.0	16	2.35	25.0	11.0	23	3.8	66	15.8	47	15,536	37	30
1,298.2	30	(5.7)	87	(5.6)	87	(22.5)	81	(3.14)	(1,263.0)	—		12.6	53	11.7	57	11,350	47	31
N.A.		—		—		—		N.A.	—	—		—		—		4,117	67	32
4,430.3	10	41.4	1	26.1	1	51.5§	2	44.75	152.3	20.1	6	10.8	57	17.5	41	6,500	57	33
1,666.5	24	4.5	28	5.8	29	14.1§	36	2.05	15.2	1.6	49	52.7	12	10.6	60	42,000	12	34
N.A.		—		—		—		N.A.	—	—		—		—		2,350	83	35
N.A.		(0.6)	76	(2.6)	81	(6.7)	76	(1.25)	—	—		—		—		1,400	90	36
453.6	56	(5.9)	88	(17.0)	90	(56.7)	85	(11.52)	—	—		23.2	39	20.0	31	12,662	44	37
253.0	64	0.9	65	4.7	36	12.0	45	1.67	(4.6)	6.1	40	37.5	28	24.3	19	10,312	48	38
4,826.2	9	11.0	8	10.0	12	21.7	14	1.51	31.3	21.3	4	(0.4)	71	32.8	3	21,500	25	39
33.0	80	1.0	62	4.4	39	10.3	52	1.55	11.5	—		58.5	9	—		2,900	77	40
N.A.		—		—		—		N.A.	—	—		—		—		5,173	60	41
472.6	54	(1.2)	78	(1.3)	7	(4.4)	73	(0.47)	—	—		(10.1)	81	11.5	58	106,000	3	42
N.A.		4.1	30	2.4	55	11.9	47	N.A.	—	—		—		—		16,600	35	43
586.5	50	2.0	48	1.3	62	6.5	64	1.12	(30.9)	(1.3)	54	73.9	4	1.7	69	33,046	21	44
791.0	42	2.9	40	4.5	38	7.5	63	1.46	128.1	2.3	47	(4.3)	77	14.5	51	10,000	49	45
1,524.8	26	7.7	13	12.9	7	19.8	18	1.20	(19.5)	—		17.7	46	—		2,234	85	46
710.6	47	(3.0)	81	(1.7)	79	—		(2.04)	(252.2)	—		33.9	31	28.3	10	15,000	38	47
351.8	60	(3.5)	83	(8.0)	89	(27.6)	82	(1.19)	—	—		(2.1)	75	27.4	14	1,132	93	48
9.8	82	(16.0)	91	—		—		N.A.	—	—		(78.6)	84	—		1,700	88	49
1,037.4	35	1.5	53	0.6	68	3.2	68	0.44	—	(19.5)	60	4.3	65	(2.6)	71	6,800	56	50

Companies deriving more than 50% of their revenues solely from banking, life insurance, finance, savings, retailing, transportation, or utilities.

Company was No. 8 on last year's FORTUNE 500 industrials.

Figures are for fiscal year ended February 29, 1988.

Figures are for fiscal year ended March 31, 1988.

Company was No. 28 on last year's Diversified Financial list.

Company was No. 36 on last year's Utilities list.

Company was No. 43 on last year's Utilities list.

Figures are for fiscal year ended October 31, 1988.

Wholly owned by General Motors (No. 1 on the FORTUNE 500 Industrial list).

Figures are for fiscal year ended June 30, 1988.

Figures are for fiscal year ended September 30, 1988.

Figures are for fiscal year ended August 31, 1988.

THE SERVICE 500

THE 100 LARGEST

SERVICE

RANK BY SALES 1988	1987	COMPANY	SALES $ Millions	% change from 1987	PROFITS $ Millions	Rank	% change from 1987	ASSETS $ Millions	Rank	STOCKHOLDERS' EQUITY $ Millions	Rank
51	53	**PHH GROUP** Hunt Valley, Md.	1,618.3	18.8	43.7	45	10.6	4,148.1	17	316.0	53
52	45	**HOLIDAY** Memphis	1,596.6	(4.0)	87.6‡	30	(19.0)	2,138.8	36	(679.9)	97
53	54	**PITTSTON** Greenwich, Conn.	1,580.1	17.8	48.6**	43	–	992.0	58	439.2	43
54	49	**SUPER FOOD SERVICES** Dayton	1,573.1	2.5	14.5	65	21.7	224.4	99	92.8	83
55	52	**AUTOMATIC DATA PROCESSING** Roseland, N.J.	1,549.2	11.9	170.3	15	29.0	1,653.5	45	982.3	19
56	55	**W.W. GRAINGER** Skokie, Ill.	1,535.5	16.3	108.8	24	20.2	936.2	60	635.5	34
57	50	**SERVICEMASTER** Downers Grove, Ill.	1,531.3	7.4	64.6	36	7.7	483.8	77	51.4	91
58	57	**CENTEX** Dallas	1,460.1	12.0	74.2	33	67.8	1,038.6	56	364.8	47
59	●	**UNION EQUITY CO-OP. EXCHANGE** Enid, Okla.	1,458.4	57.0	N.A.		–	369.4	86	81.1	86
60	●	**ACE HARDWARE** Oak Brook, Ill.	1,382.0	15.3	N.A.		–	438.7	80	131.1	79
61	63	**CBI INDUSTRIES** Oak Brook, Ill.	1,375.7	18.6	27.5	55	95.0	1,343.4	49	360.9	48
62	61	**COMDISCO** Rosemont, Ill.[11]	1,326.0	12.9	17.0	63	(81.9)	3,488.0	23	450.0	42
63	●	**NVR LP** McLean, Va.	1,320.3	23.4	33.5	51	55.3	2,193.9	35	132.4	78
64	86	**CHARTER MEDICAL** Macon, Ga.	1,286.0	58.2	(38.9)‡	82	(174.8)	1,337.0	50	(769.7)	98
65	68	**BINDLEY WESTERN INDUSTRIES** Indianapolis	1,275.0	20.8	3.6	71	96.0	263.7	94	45.1	93
66	81	**RYLAND GROUP** Columbia, Md.	1,272.0	50.0	40.7	47	26.4	4,246.5	16	168.5	67
67	62	**KELLY SERVICES** Troy, Mich.	1,269.4	9.3	60.3	37	19.5	326.4	89	229.9	57
68	70	**VIACOM** New York	1,258.5	24.5	(123.1)	87	–	3,980.1	20	342.3	49
69	59	**BLOUNT** Montgomery, Ala.	1,230.7	(0.3)	7.9	68	9.9	600.1	70	142.9	76
70	●	**WHEELABRATOR GROUP** Hampton, N.H.	1,215.6	–	24.4	58	–	1,582.4	47	299.5	54
71	●	**ECOLAB** St. Paul[18]	1,211.9	22.5	44.1	44	(15.5)	943.3	59	433.3	44
72	●	**APL** Miami Beach[11,19]	1,209.0	–	(31.5)	81	–	583.8	71	34.4	94
73	76	**NIKE** Beaverton, Oreg.[13]	1,203.4	37.2	101.7	27	183.4	709.1	68	411.8	46
74	64	**PHM** Bloomfield Hills, Mich.[20]	1,179.2	4.3	31.8	53	(14.6)	4,892.2	12	254.6	56
75	73	**INTERPUBLIC GROUP OF COS.** New York	1,152.9	21.7	60.1	38	22.0	1,600.0	46	332.9	50
76	69	**COMPUTER SCIENCES** El Segundo, Calif.	1,152.4	11.7	43.5	46	35.0	661.1	69	332.7	51
77	60	**DI GIORGIO** San Francisco	1,145.5	(3.0)	9.5	67	–	225.9	98	80.3	87
78	66	**RYKOFF-SEXTON** Los Angeles	1,143.3	5.7	16.4	64	104.5	325.8	90	163.9	70
79	77	**COMMERCIAL METALS** Dallas	1,129.2	29.4	24.4	57	139.5	337.4	88	168.2	68
80	56	**TESORO PETROLEUM** San Antonio	1,124.1	(14.9)	(19.4)	77	–	490.2	75	164.6	69
81	●	**UNIVAR** Seattle[3]	1,117.3	61.2	11.2	66	1,467.8	394.7	83	96.3	81
82	●	**COLUMBIA PICTURES ENTERTAINMENT** New York[3]	1,106.9[15]	–	(62.3)[13]	85	–	3,422.9	24	1,041.8	17
83	80	**INDIANA FARM BUREAU COOP.** Indianapolis[12]	1,102.7	29.0	N.A.[14]		–	243.9	96	87.2	85
84	79	**OGDEN** New York	1,087.8	26.7	57.8	40	6.9	2,201.7	34	425.8	45
85	75	**SERVISTAR** Butler, Pa.[10,21]	1,072.1	21.0	N.A.[14]		–	283.9	93	73.5	89
86	●	**FOSTER WHEELER** Clinton, N.J.	1,053.8	(13.6)	28.5	54	845.8	1,108.6	54	451.1	41
87	96	**BALFOUR MACLAINE** New York	1,041.8	42.0	(4.0)	74	(156.8)	408.8	81	30.8	95
88	●	**ARROW ELECTRONICS** Melville, N.Y.	1,040.9	71.1	23.2	59	–	530.1	73	147.9	75
89	78	**NASHUA** Nashua, N.H.	989.4	14.4	32.5	52	22.3	449.6	79	228.2	58
90	71	**DAIRYMEN** Louisville, Ky.	984.7	(2.4)	N.A.		–	229.2	97	79.6	88
91	82	**HILTON HOTELS** Beverly Hills	953.6	13.0	130.9	19	(6.4)	1,829.5	43	814.1	23
92	●	**HARDWARE WHOLESALERS** Fort Wayne	942.7	13.4	N.A.[14]		–	256.4	95	95.0	82
93	88	**CULBRO** New York	942.5	16.7	2.4	72	(92.4)	395.9	82	125.8	80
94	74	**CHARTER** Cincinnati	930.6	(1.6)	58.6	39	25.0	294.7	92	143.1	74
95	72	**GUY F. ATKINSON** S. San Francisco	920.0	(5.0)	1.0	73	(53.1)	380.6	85	184.2	65
96	●	**TONKA** Minnetonka, Minn.	907.7	137.2	(5.8)	75	–	909.6	62	87.6	84
97	93	**M.D.C. HOLDINGS** Denver	875.7	(5.5)	(31.4)**	80	(215.9)	1,993.4	39	179.5	66
98	84	**PIONEER HI-BRED INTERNATIONAL** Des Moines	874.9	4.2	65.1	35	20.7	864.7	64	576.9	38
99	91	**LORIMAR TELEPICTURES** Culver City, Calif.	861.8	12.5	(86.8)	86	–	1,110.7	53	294.4	55
100	97	**UNITED STATIONERS** Des Plaines, Ill.	856.0	17.3	23.1	60	53.1	358.9	87	151.1	72
		TOTALS	270,967.8		6,343.8			240,397.6		65,405.5	

● Not on last year's list.

† Average for the year; see the reference to "employees" on page 388.

‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and "earnings per share" on page 388.

** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" on page 388.

N.A. Not available.

Dividends paid on mandatory redeemable preferred stock subtracted from profits.

Figures are for fiscal year ended May 31, 1988.

Cooperatives provide only net margin figures, which are not comparable to the profit figures in this list.

Figures are FORTUNE estimates.

DIVERSIFIED SERVICE COMPANIES

MARKET VALUE		NET PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1987	1978-88 annual growth rate				1978-88 annual average				
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$		%	Rank	1988 %	Rank	%	Rank	Number	Rank	
581.5	52	2.7	43	1.1	64	13.8	37	2.60	10.6	12.0	21	28.4	37	19.6	35	4,513	64	51
989.8	38	5.5	21	4.1	44	—		3.51‡	(20.6)	5.6	41	8.0	62	25.5	16	38,786	14	52
758.8	44	3.1	38	4.9	33	11.1	51	1.26**	—	6.5	39	75.0	3	2.4	66	13,742	40	53
196.4	68	0.9	64	6.5	25	15.6§	31	2.02	20.2	15.8	16	22.2	42	23.9	20	2,090	86	54
3,011.7	15	11.0	7	10.3	10	17.3	22	2.20	25.0	16.9	14	(12.6)	82	19.9	33	23,000	24	55
1,538.6	25	7.1	15	11.6	8	17.1	23	1.92	24.8	10.7	24	(6.9)	80	15.2	50	7,209	53	56
726.6	46	4.2	29	13.4	6	125.7	1	2.02	6.3	19.1	8	1.7	67	19.6	36	17,023	32	57
472.0	55	5.1	25	7.1	22	20.3	17	4.63	87.4	13.5	20	71.5	6	12.9	55	4,200	66	58
N.A.		—		—		—		N.A.	—	—		—		—		590	98	59
N.A.		—		—		—		N.A.	—	—		—		—		2,741	79	60
586.5	51	2.0	50	2.0	57	7.6	61	0.87	128.9	(9.8)	58	30.5	34	4.5	65	12,000	45	61
992.5	37	1.3	57	0.5	70	3.8	67	0.41	(81.9)	8.7	30	14.0	52	27.6	12	1,500	89	62
161.9	70	2.5	45	1.5	60	25.3	8	1.25	64.5	—		71.3	7	—		2,739	80	63
N.A.		(3.0)	82	(2.9)	82	—		(1.38)‡	(181.7)	—		—		—		17,000	33	64
53.1	78	0.3	69	1.3	61	7.9	60	0.58	107.1	—		(1.7)	73	—		378	99	65
243.3	66	3.2	36	1.0	65	24.1	11	3.10	26.0	20.6	5	51.7	14	30.6	5	2,695	81	66
889.0	40	4.8	26	18.5	3	26.2	6	2.51	19.5	17.1	13	(3.7)	76	29.6	7	3,750	69	67
2,294.7	17	(9.8)	89	(3.1)	83	(36.0)	84	(3.54)	—	—		71.7	5	—		4,400	65	68
150.1	73	0.6	67	1.3	63	5.5	66	0.66	10.0	4.2	43	40.9	23	12.6	56	8,100	51	69
784.4	43	2.0	49	1.5	59	8.1	59	0.26	—	—		(4.4)	78	—		9,700	50	70
732.7	45	3.6	34	4.7	37	10.2	55	1.63	(16.4)	5.5	42	15.7	50	13.4	53	13,500	42	71
N.A.		(2.6)	80	(5.4)	86	(91.4)	86	(8.44)	—	—		—		—		11,583	46	72
1,386.4	28	8.5	9	14.3	5	24.7	9	2.70	190.3	—		38.2	27	—		3,450	73	73
343.7	61	2.7	44	0.6	67	12.5	43	1.21	(14.8)	11.1	22	34.9	30	29.9	6	2,300	84	74
98[illegible].0	39	5.2	24	3.8	47	18.1	20	2.72	20.9	10.2	26	18.4	45	22.8	24	14,700	39	75
809.3	41	3.8	32	6.6	24	13.1	40	2.73	31.3	10.6	25	(5.9)	79	15.5	48	18,300	28	76
138.6	74	0.8	66	4.2	41	11.9	48	1.68	—	0.5	51	50.6	16	13.5	52	2,900	76	77
286.4	63	1.4	55	5.0	32	10.0	56	1.91	67.5	9.9	27	44.0	21	27.5	13	4,800†	61	78
248.2	65	2.2	47	7.2	18	14.5	34	2.81	146.5	15.2	18	51.7	13	25.3	17	3,258	74	79
166.5	69	(1.7)	79	(3.9)	84	(11.8)	77	(2.04)	—	—		8.0	63	6.4	63	1,900	87	80
291.7	62	1.0	60	2.8	50	11.6	49	1.27	1,054.5	0.6	50	45.4	18	28.6	9	2,546	82	81
2,029.8	20	(5.6)	86	(1.8)	80	(6.0)	74	(0.55)	(182.1)	—		50.8	15	—		6,500	58	82
N.A.		—		—		—		N.A.	—	—		—		—		858	95	83
1,144.9	34	5.3	23	2.6	52	13.6	38	1.44	6.7	(3.3)	55	9.8	59	19.7	34	37,000	18	84
N.A.		—		—		—		N.A.	—	—		—		—		1,336	91	85
626.0	48	2.7	41	2.6	53	6.3	65	0.81	800.0	(4.3)	56	8.7	61	10.7	59	7,925	52	86
41.7	79	(0.4)	74	(1.0)	75	(12.9)	78	(0.68)	(156.7)	—		0.3	69	18.4	39	813	96	87
66.3	77	2.2	46	4.4	40	12.0§	46	1.55	—	3.0	46	(1.9)	74	5.7	64	2,775	78	88
380.4	58	3.3	35	7.2	19	14.3	35	3.38	24.3	3.3	44	38.4	26	15.8	46	7,000	55	89
N.A.		—		—		—		N.A.	—	—		—		—		4,091	68	90
2,871.5	16	13.7	3	7.2	20	16.1	27	2.72	(2.7)	7.6	33	52.8	11	20.7	28	38,000	15	91
N.A.		—		—		—		N.A.	—	—		—		—		750†	97	92
161.0	71	0.3	70	0.6	69	1.9	69	0.56	(92.4)	—		20.2	43	28.3	11	4,800	62	93
241.2	67	6.3	19	19.9	2	39.5	3	1.22	24.5	0.4	52	19.9	44	2.2	68	50	100	94
152.5	72	0.1	73	0.3	73	0.6	70	0.12	(52.0)	—		9.5	60	—		5,949†	59	95
112.6	75	(0.6)	75	(0.6)	74	(6.6)	75	(0.75)	—	—		(1.4)	72	22.1	26	3,607†	71	96
31.8	81	(3.6)	84	(1.6)	78	(17.5)	80	(1.81)**	(233.1)	—		(51.0)	83	—		979	94	97
1,185.5	32	7.4	14	7.5	17	11.3	50	2.05	21.3	9.1	28	10.4	58	16.1	45	4,645	63	98
N.A.		(10.1)	90	(7.8)	88	(29.5)	83	N.A.	—	—		26.8	38	—		1,329	92	99
378.1	59	2.7	42	6.4	26	15.3	33	1.50	51.5	—		30.0	35	—		3,000	75	100
176,259.2																2,011,433		

---

* Figures are for fiscal year ended April 30, 1988.

Name changed during spinoff from Henley Group December 31, 1988.

* Company was No. 331 on last year's FORTUNE 500 Industrials.

Figures reflect acquisition of Fischbach (No. 65 on last year's Diversified Service list) September 30, 1987.

Figures reflect acquisition of Pulte Home (No. 64 on last year's Diversified Service list) December 7, 1987.

Name changed from American Hardware Supply July 1, 1988.

Company was No. 284 on last year's FORTUNE 500 Industrials.

Name changed from Kay May 26, 1988.

THE SERVICE 500

THE 100 LARGEST

RANK BY ASSETS 1988	1987	COMPANY	ASSETS[1] $ Millions	% change from 1987	DEPOSITS $ Millions	Rank	LOANS[2] $ Millions	Rank	PROFITS $ Millions	Rank	% change from 1987
1	1	**CITICORP** New York	207,666.0	2.0	124,072.0	1	144,992.0	1	1,858.0	1	–
2	2	**CHASE MANHATTAN CORP.** New York	97,455.1	(1.7)	64,056.7	3	66,859.6	2	1,058.9	2	–
3	3	**BANKAMERICA CORP.** San Francisco	94,647.0	2.0	77,150.0	2	65,420.0	3	726.0**	6	–
4	5	**J.P. MORGAN & CO.** New York	83,923.0	11.3	42,469.0	7	26,842.0	10	1,001.8	3	1,102.6
5	6	**SECURITY PACIFIC CORP.** Los Angeles	77,870.0	6.2	47,653.0	5	54,329.0	4	638.9	8	3,969.4
6	4	**CHEMICAL BANKING CORP.** New York[3]	67,349.0	(13.9)	47,966.0	4	39,550.0	6	753.6	5	–
7	7	**MANUFACTURERS HANOVER CORP.** New York	66,710.0	(9.1)	41,714.0	8	46,678.0	5	952.0**	4	–
8	9	**FIRST INTERSTATE BANCORP** Los Angeles	58,193.9	14.3	44,148.7	6	36,603.1	8	129.4**	37	–
9	8	**BANKERS TRUST NEW YORK CORP.** New York	57,942.3	2.5	32,490.7	11	22,801.2	15	647.7	7	54,932.5
10	28	**BANK OF NEW YORK CO.** New York[4]	47,388.1	105.5	32,706.4	10	32,122.0	9	213.0	27	106.0
11	11	**WELLS FARGO & CO.** San Francisco	46,616.5	5.5	35,068.8	9	36,917.9	7	512.5	10	908.9
12	10	**FIRST CHICAGO CORP.** Chicago	44,432.0	.5	32,018.0	12	26,558.0	11	513.1	9	–
13	15	**PNC FINANCIAL CORP** Pittsburgh	40,811.1	29.8	27,453.4	13	23,501.6	14	442.7	11	116.1
14	12	**BANK OF BOSTON CORP.** Boston	36,060.6	5.7	23,590.6	16	25,767.8	12	322.3	14	1,539.3
15	17	**BANK OF NEW ENGLAND CORP.** Boston	32,200.0	9.2	24,623.0	14	24,614.0	13	281.7	18	100.4
16	16	**MELLON BANK CORP.** Pittsburgh	31,153.0	2.1	21,325.0	19	18,075.0	23	(65.0)	96	–
17	14	**CONTINENTAL BANK CORP.** Chicago[5]	30,578.0	(5.6)	16,967.0	30	15,585.0	27	315.8	15	–
18	18	**NCNB CORP.** Charlotte, N.C.	29,848.4	3.2	20,670.1	21	18,676.9	20	252.5	19	51.3
19	19	**FIRST FIDELITY BANCORP.** Newark, N.J.; Phila.	29,777.0	3.2	21,562.4	18	19,173.9	18	33.9	86	(60.7)
20	21	**SUNTRUST BANKS** Atlanta	29,177.1	7.3	23,944.5	15	19,799.6	17	308.7	16	9.2
21	•	**FLEET/NORSTAR FINANCIAL GROUP** Providence[6]	29,052.2	18.4	20,701.2	20	16,321.0	25	335.8	13	81.5
22	20	**FIRST UNION CORP.** Charlotte, N.C.	28,977.6	4.9	20,033.3	23	18,673.2	21	296.9	17	4.9
23	23	**SHAWMUT NATIONAL CORP.** Boston, Hartford	28,413.8	7.3	18,987.6	26	18,382.3	22	242.5	22	52.6
24	24	**MARINE MIDLAND BANKS** Buffalo[7]	25,964.1	2.0	17,340.8	28	21,621.8	16	160.5**	33	–
25	26	**BARNETT BANKS** Jacksonville, Fla.	25,748.4	9.8	22,482.2	17	19,153.1	19	226.4	25	13.8
26	13	**NCNB TEXAS NATIONAL BANK** Dallas[8]	25,573.6	(23.0)	20,474.8	22	11,489.4	37	NA		–
27	35	**BANC ONE CORP.** Columbus, Ohio	25,273.7	34.9	19,501.8	24	17,087.4	24	340.2	12	62.9
28	29	**REPUBLIC NEW YORK CORP.** New York	24,519.0	9.5	16,346.3	33	5,544.0	62	169.6	32	887.9
29	22	**FIRST BANK SYSTEM** Minneapolis	24,248.0	(9.7)	17,204.0	29	15,676.0	26	(310.0)	97	(725.0)
30	27	**NBD BANCORP** Detroit	24,176.2	3.5	19,494.8	25	14,444.6	30	227.2	24	41.3
31	30	**SOVRAN FINANCIAL CORP.** Norfolk, Virginia	22,483.8	5.9	17,493.1	27	15,128.2	29	243.1	21	11.8
32	34	**FIRST WACHOVIA CORP.** Winston-Salem, N.C.	21,815.2	12.8	16,492.0	32	13,561.7	34	244.3	20	38.3
33	31	**NORWEST CORP.** Minneapolis	21,750.4	4.8	13,901.8	38	14,080.7	31	211.2	28	–
34	39	**NATIONAL CITY CORP.** Cleveland	21,623.4	45.0	16,906.3	31	14,046.8	32	233.2	23	140.6
35	32	**CITIZENS AND SOUTHERN CORP.** Atlanta	21,097.5	3.2	16,082.0	34	13,890.9	33	206.3	29	30.6
36	36	**MIDLANTIC CORP.** Edison, N.J.	19,697.4	10.7	15,793.1	35	15,247.0	28	222.9	26	38.0
37	44	**NATIONAL WESTMINSTER BANCORP** New York[9]	19,013.4	64.8	15,653.5	36	12,929.2	35	129.9**	36	–
38	33	**MCORP** Dallas‡‡	18,743.0	(7.3)	15,521.0	37	11,105.0	38	(940.0)	98	–
39	37	**MNC FINANCIAL** Baltimore	18,015.2	8.1	12,309.2	39	12,625.3	36	182.2	30	22.5
40	38	**CORESTATES FINANCIAL CORP.** Philadelphia	16,430.9	9.3	11,115.2	44	10,808.3	39	179.5	31	10.6
41	41	**SOUTHEAST BANKING CORP.** Miami	15,623.2	21.7	11,505.0	42	9,765.6	41	75.3	61	96.2
42	75	**UNION BANK** San Francisco[10]	15,010.3	147.6	11,911.0	40	10,746.6	40	60.2	67	50.1
43	52	**BOATMEN'S BANCSHARES** St. Louis[11]	14,675.8	48.5	11,223.8	43	8,757.1	44	69.8‡	63	(14.2)
44	43	**KEYCORP** Albany, N.Y.	14,645.7	26.3	11,580.6	41	9,205.4	43	119.9	39	49.9
45	40	**U.S. BANCORP** Portland, Oreg.	14,383.4	7.7	7,844.6	57	9,549.9	42	123.9	38	14.2
46	•	**FIRST CITY BANCORP. OF TEXAS** Houston[11]	12,195.5	–	9,842.9	45	7,032.1	51	N.A.		–
47	45	**VALLEY NATIONAL CORP.** Phoenix	11,765.7	4.1	9,511.9	46	7,623.9	45	67.3	65	–
48	62	**MICHIGAN NATIONAL CORP.** Farmington Hills, Mich.	11,305.7	33.3	9,213.6	48	7,339.7	48	93.2	47	26.0
49	48	**HARRIS BANKCORP** Chicago[11]	11,276.4	6.8	8,349.2	53	6,383.9	55	90.1	49	111.4
50	51	**COMERICA** Detroit	11,145.5	10.2	9,249.8	47	6,790.2	53	112.0	41	56.8

- • Not on last year's list.
- ** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" on page 388.
- † Average for the year; see the reference to "employees" on page 388.
- ‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and "earnings per share" on page 388.
- N.A. Not available.
- § Dividends paid on mandatory redeemable preferred stock subtracted from profits.
- ‡‡ Estimate.

[1] As of December 31, 1988. All companies on the list must have more than 80% of their assets in chartered commercial banking institutions.

[2] Net of unearned discount and loan loss revenue. Figure includes lease financing.

[3] Name changed from Chemical New York Corp. April 26, 1988.

COMMERCIAL BANKING COMPANIES

BANKING

STOCKHOLDERS' EQUITY		MARKET VALUE		PROFITS AS PERCENT OF ASSETS		PROFITS AS PERCENT OF STOCKHOLDERS' EQUITY		EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
$ Millions	Rank	$ Millions	Rank	%	Rank	%	Rank	1988/$	% change from 1987	1978-88 annual growth rate %	Rank	1988 %	Rank	1978-88 annual average %	Rank	Number	Rank	
9,864.0	1	9,532.0	1	0.9	55	18.8§	11	5.36	–	11.0	42	48.2	11	14.5	72	89,000	1	1
4,842.7	3	3,261.2	8	1.1	22	21.8§	4	11.55	–	15.4	11	40.6	16	14.6	71	41,570	3	2
4,149.0	4	4,585.9	4	0.8	72	17.5	17	3.79**	–	1.1	77	156.4	1	0.9	84	61,020	2	3
5,778.0	2	6,776.2	2	1.2	8	17.3	18	5.38	1,279.5	13.0	26	0.4	77	17.5	60	15,363	21	4
3,843.0	6	4,777.0	3	0.8	69	16.6	26	5.59	55,800.0	10.0	48	50.7	9	19.3	47	41,363	4	5
3,967.0	5	2,298.3	17	1.1	16	19.0	10	12.02	–	14.4	16	61.1	7	14.9	69	27,225	6	6
3,251.0	8	1,840.7	25	1.4	4	29.3	1	18.27**	–	12.6	31	49.9	10	7.6	81	23,557	7	7
2,239.9	13	2,233.6	18	0.2	92	5.8	91	2.63**	–	(4.9)	82	17.5	52	12.2	77	36,644	5	8
3,498.6	7	3,568.7	7	1.1	17	18.5	13	8.09	40.350.0	17.6	6	16.4	55	21.9	29	12,751	31	9
2,792.3	9	2,849.2	13	0.4	84	7.6	84	5.61	88.9	10.5	45	51.9	8	20.2	43	17,766	14	10
2,579.4	10	3,783.3	5	1.1	20	19.9	8	9.20	1,669.2	14.1	18	46.0	12	22.4	21	19,700	11	11
2,369.0	12	2,407.1	16	1.2	10	21.7	5	8.20	–	9.6	51	66.2	5	11.1	78	16,069	18	12
2,504.8	11	3,780.1	6	1.1	23	17.7	15	5.09	72.0	13.0	28	11.4	61	22.1	27	15,823	19	13
2,085.3	14	1,832.0	26	0.9	56	15.5	37	4.66	4,560.0	15.1	12	9.5	65	21.2	36	19,500	12	14
1,641.0	21	1,479.3	31	0.9	60	17.2	19	4.06	99.0	13.0	27	(7.6)	84	21.4	34	17,464	15	15
1,202.0	34	961.4	41	(0.2)	96	(6.5)§	96	(3.65)	–	–		1.4	76	5.9	82	16,522†	16	16
1,605.0	22	879.3	44	1.0	31	19.7	9	5.19	–	(11.7)	83	76.9	4	(11.1)	86	8,105	42	17
1,942.2	17	3,119.4	10	0.8	63	13.0	64	2.90	42.9	11.2	41	64.2	6	21.6	31	12,979	29	18
1,513.9	24	1,751.9	28	0.1	94	2.2	93	0.29	(76.4)	–		(17.4)	86	21.8	30	14,100	24	19
1,880.3	19	2,952.6	12	1.1	27	16.4	30	2.38	9.7	11.5	39	12.4	60	17.9	58	19,936	9	20
2,049.3	15	3,035.0	11	1.2	9	16.4	31	3.07	65.9	14.5	14	17.2	54	27.0	3	20,054	8	21
1,923.5	18	2,540.4	14	1.0	32	15.4	39	2.76	8.2	11.8	38	18.0	49	22.0	28	19,761	10	22
1,702.8	20	1,867.1	24	0.9	62	14.2	55	3.28	181.1	11.9	37	25.8	31	22.2	23	12,867†	30	23
1,179.0	35	N.A.		0.6	77	13.6	61	N.A.	–	–		–		–		13,403	28	24
1,464.4	26	2,077.5	22	0.9	58	15.4§	38	3.75	13.3	16.5	8	23.5	38	23.8	14	18,500	13	25
1,070.2	38	N.A.		–		–		N.A.	–	–		–		–		14,711	22	26
2,015.4	16	3,215.0	9	1.3	6	16.9	21	2.61	31.8	13.4	23	5.8	71	21.5	33	16,370	17	27
1,426.3	29	1,303.0	34	0.7	74	11.9	74	5.01	4,454.5	12.3	33	(1.0)	78	23.0	17	3,625	84	28
1029.0	40	1,422.0	32	(1.3)	97	(30.1)	97	(5.25)	(819.2)	–		9.4	66	15.1	68	9,004*	36	29
1,503.5	25	2,002.7	23	0.9	45	15.1	44	4.81	38.6	9.8	49	19.3	44	21.3	35	12,114*	32	30
1,428.1	28	2,104.8	20	1.1	24	17.0	20	4.09	11.4	8.2	59	5.9	70	21.6	32	14,519	23	31
1,557.3	23	2,459.9	15	1.1	15	15.7	34	4.34	34.0	14.5	15	17.3	53	21.2	38	13,764	27	32
1,267.5	33	1,705.9	29	1.0	39	16.7	25	4.52	–	6.7	68	35.8	18	13.0	75	15,400	20	33
1,321.2	32	2,079.5	21	1.1	25	17.7	16	3.84	64.1	8.6	56	18.3	47	17.8	59	14,092	25	34
1,354.2	30	2,131.6	19	1.0	38	14.7	42	3.25	29.0	25.0	4	11.3	62	22.2	24	13,871	26	35
1,326.4	31	1,643.8	30	1.1	11	16.8	22	5.85	33.0	13.2	25	18.7	46	22.1	26	10,580	33	36
1,461.0	27	N.A.		0.7	75	8.9	81	N.A.	–	–		–		–		8,140	41	37
309.0	96	12.0	88	(5.0)	98	(304.2)	98	(21.16)	–	–		(73.7)	87	(22.8)	87	7,962	43	38
1,103.5	37	1,407.5	33	1.0	34	16.4§	29	6.28	21.0	15.5	10	26.9	29	25.1	12	8,900	37	39
1,117.8	36	1,766.1	27	1.1	21	16.1	33	4.50	15.1	12.5	32	25.2	32	26.5	5	8,222	40	40
752.2	45	842.4	45	0.5	82	10.0	79	2.35	106.1	5.2	71	23.8	36	15.7	66	8,341	39	41
819.8	43	768.6	49	0.4	88	7.3	85	3.51	16.6	4.0	74	–		–		7,764	44	42
1,029.5	39	1,151.5	35	0.5	83	6.8§	87	2.01‡	(51.4)	(0.8)	79	5.3	72	17.9	57	8,600	38	43
933.7	42	973.7	40	0.8	70	12.8	68	2.90	28.9	8.5	57	(1.1)	79	21.0	40	10,515	34	44
943.8	41	1,137.3	36	0.9	61	13.1	63	3.02	14.0	7.2	65	18.2	48	12.7	76	9,668	35	45
646.8	55	409.1	81	–		–		N.A.	–	–		–		–		6,681	48	46
617.6	56	574.9	66	0.6	78	10.9	76	3.41	–	3.4	75	(4.2)	82	10.2	79	7,275	47	47
573.3	59	639.6	59	0.8	68	16.2	32	6.07	25.2	4.9	72	13.4	59	16.1	63	6,500	50	48
705.0	50	N.A.		0.8	71	12.8	70	13.51	111.4	12.7	30	–		–		5,290	64	49
668.4	52	769.5	48	1.0	35	16.8	24	6.78	64.2	9.3	52	22.7	40	18.9	50	6,611	49	[illegible]

---

* Figures reflect acquisition of Irving Bank Corp. (No. 25 among last year's Commercial Banks) November 29, 1988.

† Name changed from Continental Illinois Corp. December 12, 1988.

* Company was No. 12 on last year's Diversified Financial list.

Wholly owned by Hongkong & Shanghai Banking Corp. (No. 31 among last year's largest International Banks).

Created by the FDIC from certain assets and liabilities of First RepublicBank Corp. (No. 13 among last year's Commercial Banks) July 29, 1988. The company is 80% owned by the FDIC and 20% owned by NCNB Corp. (No. 18).

Formed by the merger of National Westminster Bank USA (No. 44 among last year's Commercial Banks) and First Jersey National Corp. February 1, 1988. The company is wholly owned by National Westminster Bank (No. 15 among last year's largest International Banks).

Formed by the merger of California First Bank (No. 75 among last year's Commercial Banks) and Union Bancorp (No. 42 last year) November 1, 1988. The company is 76.5% owned by Bank of Tokyo (No. 21 among last year's largest International Banks).

THE SERVICE 500

THE 100 LARGEST

BANKING

RANK BY ASSETS 1988	1987	COMPANY	ASSETS $ Millions	% change from 1987	DEPOSITS $ Millions	Rank	LOANS $ Millions	Rank	PROFITS $ Millions	Rank	% change from 1987
51	47	**SIGNET BANKING CORP.** Richmond	11,001.6	2.6	7,545.9	59	6,820.8	52	152.5	34	550.1
52	50	**UNITED JERSEY BANKS** Princeton	10,887.9	7.4	8,893.8	49	7,209.4	50	116.1	40	13.0
53	49	**AMERITRUST CORP.** Cleveland	10,738.3	3.9	8,358.8	52	7,306.0	49	103.5	43	–
54	54	**FIRST AMERICAN BANKSHARES** Washington	10,639.7	10.6	8,380.0	51	6,479.8	54	80.3	57	56.7
55	53	**CRESTAR FINANCIAL CORP.** Richmond	10,408.3	6.9	7,981.7	54	7,364.4	47	86.7	53	52.9
56	58	**SOCIETY CORP.** Cleveland	10,009.6	10.3	7,675.6	58	6,175.4	57	100.1	44	10.0
57	55	**NORTHERN TRUST CORP.** Chicago	9,903.9	6.2	6,752.6	63	4,514.6	69	109.3	42	–
58	60	**FIRST OF AMERICA BANK CORP.** Kalamazoo, Mich.	9,769.4	12.6	8,675.4	50	6,151.3	58	88.8	50	13.5
59	63	**MERIDIAN BANCORP** Reading, Pa.	9,523.0	13.5	7,125.4	60	6,068.1	59	86.1	54	14.2
60	59	**HUNTINGTON BANCSHARES** Columbus, Ohio	9,506.0	7.6	7,106.7	61	5,815.3	61	87.6	52	83.1
61	61	**BAYBANKS** Boston	9,496.5	11.6	7,899.7	55	7,516.0	46	88.5	51	27.6
62	57	**MANUFACTURERS NATIONAL CORP.** Detroit	9,310.9	2.6	7,868.4	56	6,029.6	60	96.3	46	1,351.6
63	64	**DOMINION BANKSHARES CORP.** Roanoke, Va.	9,204.0	21.1	7,082.1	62	6,289.2	56	83.0	56	17.7
64	68	**STATE STREET BOSTON CORP.** Boston	8,372.0	20.4	5,388.4	72	2,128.8	98	92.3	48	11.1
65	66	**AMSOUTH BANCORP.** Birmingham, Ala.	8,312.9	10.4	6,510.9	64	5,291.8	64	79.8	58	32.5
66	72	**OLD KENT FINANCIAL CORP.** Grand Rapids	7,854.1	21.7	6,504.8	65	4,628.1	66	77.1	59	21.7
67	67	**FIRSTAR CORP.** Milwaukee	7,841.9	8.1	6,293.5	66	4,903.3	65	132.3**	35	–
68	65	**FLORIDA NAT'L BANKS OF FLORIDA** Jacksonville	7,827.7	3.6	6,089.7	67	4,520.7	68	34.9	85	7.3
69	71	**FIRST AMERICAN CORP.** Nashville	7,204.0	10.9	5,817.8	68	4,425.7	70	30.4	89	(36.3)
70	69	**RIGGS NATIONAL CORP.** Washington	7,001.9	3.2	5,537.3	70	3,513.8	87	37.0	84	3,554.1
71	73	**BANK OF TOKYO TRUST CO.** New York[15]	6,945.7	8.4	5,497.6	71	3,595.9	84	37.2	83	255.4
72	•	**BANCAL TRI-STATE CORP.** San Francisco[16]	6,887.8	46.4	4,322.6	89	5,488.5	63	25.5**	91	–
73	81	**MARSHALL & ILSLEY CORP.** Milwaukee	6,774.9	21.9	5,211.1	74	4,021.7	76	76.2	60	31.6
74	76	**SOUTHTRUST CORP.** Birmingham, Ala.	6,645.3	12.2	5,119.0	76	4,024.8	75	67.6	64	11.9
75	77	**BANCORP HAWAII** Honolulu	6,634.7	13.9	5,661.5	69	4,014.1	77	74.9	62	38.9
76	70	**MERCANTILE BANCORP.** St. Louis	6,459.2	(4.5)	5,309.4	73	4,557.6	67	28.7	90	–
77	•	**SANWA BANK CALIFORNIA** Los Angeles	6,430.2	21.0	5,139.1	75	4,380.2	71	31.8	88	43.1
78	78	**FIRST PENNSYLVANIA CORP.** Philadelphia	6,406.7	10.4	4,757.3	77	4,114.4	74	58.2	70	–
79	80	**FIRST MARYLAND BANCORP** Baltimore	6,274.4	11.2	4,352.3	86	4,323.6	72	52.4	74	15.5
80	79	**FIRST TENNESSEE NATIONAL CORP.** Memphis	5,972.0	3.6	4,656.8	82	3,531.8	85	52.3	75	59.3
81	83	**TRUSTCORP** Toledo	5,946.6	8.1	4,472.4	84	3,964.4	78	1.3	95	(89.5)
82	84	**INDIANA NATIONAL CORP.** Indianapolis	5,927.2	8.6	4,303.4	90	3,787.0	80	55.8	71	106.4
83	94	**HIBERNIA CORP.** New Orleans	5,834.3	20.4	4,729.4	78	4,175.0	73	53.0	73	14.0
84	82	**UNITED BANKS OF COLORADO** Denver	5,811.6	5.6	4,623.6	83	3,025.8	93	9.0	94	1,247.1
85	85	**BANCO POPULAR DE PUERTO RICO** San Juan	5,661.4	5.8	4,715.8	80	3,023.5	94	47.1	80	25.6
86	•	**FIRST NATIONAL CINCINNATI CORP.** Cincinnati	5,656.6	24.8	4,723.1	79	3,834.2	79	58.5	68	27.7
87	93	**SOUTH CAROLINA NATIONAL CORP.** Columbia	5,655.2	15.0	4,028.4	93	3,767.0	81	54.5	72	3.0
88	86	**COMMERCE BANCSHARES** Kansas City, Mo.	5,444.0	3.3	4,683.4	81	2,953.7	95	49.0	77	22.4
89	74	**EUROPEAN AMERICAN BANK** New York	5,335.1	(16.7)	4,385.4	85	3,283.1	88	97.3**	45	–
90	•	**FIFTH THIRD BANCORP** Cincinnati	5,245.8	29.5	4,093.6	92	3,695.4	82	84.2	55	24.7
91	91	**EQUITABLE BANCORP.** Baltimore	5,245.0	3.6	3,517.2	98	2,935.3	97	48.2	79	18.6
92	•	**MERCHANTS NATIONAL CORP.** Indianapolis	5,225.7	24.4	3,756.8	95	2,939.6	96	44.1	81	157.0
93	•	**FIRST ALABAMA BANCSHARES** Montgomery	5,173.6	17.8	4,331.7	87	3,134.8	92	58.2	69	3.6
94	90	**FIRST SECURITY CORP.** Salt Lake City	5,159.0	1.7	3,902.7	94	3,622.5	83	33.0	87	22.2
95	92	**FIRST FLORIDA BANKS** Tampa	5,131.5	4.1	4,327.9	88	3,514.5	86	48.9	78	1.1
96	•	**FUJI BANK & TRUST CO.** New York	4,910.1	5.1	3,232.8	99	1,833.1	100	11.6	93	44.4
97	•	**BANK SOUTH CORP.** Atlanta	4,881.2	18.0	3,552.5	97	3,223.1	89	43.4	82	61.1
98	•	**FIRST VIRGINIA BANKS** Falls Church, Va.	4,795.8	8.2	4,223.1	91	3,150.8	91	60.9	66	8.3
99	•	**INDUSTRIAL BANK OF JAPAN TRUST CO.** N.Y.	4,747.5	16.6	3,089.9	100	2,061.7	99	15.4	92	1,284.3
100	•	**CENTRAL FIDELITY BANKS** Richmond	4,731.4	10.4	3,744.5	96	3,179.5	90	49.5	76	4.6
		TOTALS	2,161,204.9		1,521,668.7		1,360,185.8		17,501.2		

• Not on last year's list.
** Reflects an extraordinary credit of at least 10% ... see the explanations of "profits" and "earnings per share" on page 388.
† Average for the year; see the reference to "employees" on page 388.

N.A. Not available.
[illegible] 1988.
[illegible] April 19, 1988.

Wholly owned by Bank of Montreal (No. 60 among last year's largest International Banks).
Name changed from First Wisconsin Corp. January 1, 1989.
Wholly owned by Bank of Tokyo (No. 21 among last year's largest International Banks).

COMMERCIAL BANKING COMPANIES

STOCKHOLDERS' EQUITY $ Millions	Rank	MARKET VALUE $ Millions	Rank	PROFITS AS PERCENT OF ASSETS %	Rank	PROFITS AS PERCENT OF STOCKHOLDERS' EQUITY %	Rank	EARNINGS PER SHARE 1988/$	EARNINGS PER SHARE % change from 1987	EARNINGS PER SHARE 1978-88 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1988 %	Rank	TOTAL RETURN TO INVESTORS 1978-88 annual average %	Rank	EMPLOYEES Number	Rank	
722.5	48	928.0	42	1.4	5	21.1	6	5.71	571.8	14.8	13	31.3	24	22.4	20	5,797	57	51
800.0	44	1,037.9	39	1.1	26	14.5	51	2.58	11.7	10.5	44	(2.4)	80	22.8	18	6,446	51	52
717.7	49	909.2	43	1.0	41	14.4	53	2.62	—	6.3	69	33.3	21	17.5	61	5,899	56	53
742.6	46	N.A.		0.8	73	10.8	77	N.A.	—	—		—		—		5,730	58	54
657.4	54	752.6	51	0.8	66	13.2	62	2.96	54.2	12.2	35	13.6	58	21.2	37	5,992	55	55
689.5	51	804.2	47	1.0	36	14.5	50	4.19	11.7	66.9	1	6.4	69	19.1	49	6,076	53	56
522.2	63	754.9	50	1.1	18	20.9	7	6.61	—	14.0	20	26.6	30	18.5	52	5,387	63	57
722.8	47	509.4	73	0.9	49	12.3	73	6.16	3.9	10.9	43	9.2	67	23.4	15	7,590	45	58
666.1	53	830.5	46	0.9	52	12.9	66	2.21	6.8	4.5	73	19.5	43	14.6	70	6,049	54	59
570.4	60	735.1	53	0.9	47	15.4	40	2.33	84.3	9.6	50	16.3	56	19.8	45	5,150	65	60
564.9	61	699.0	55	0.9	46	15.7	35	5.57	14.8	14.2	17	18.9	45	25.3	9	5,665	60	61
573.9	58	709.4	54	1.0	30	16.8	23	6.40	1,322.2	7.4	63	25.0	33	20.5	41	5,463	62	62
580.4	57	738.3	52	0.9	53	14.3	54	2.14	1.9	6.9	66	(4.4)	83	15.8	65	5,548	61	63
505.6	67	1,090.1	38	1.1	19	18.3	14	2.51	12.6	27.3	3	35.3	19	40.5	1	7,298	46	64
533.4	62	633.1	62	1.0	42	15.0	47	3.30	25.5	8.4	58	3.4	73	13.8	73	4,843	68	65
511.2	64	671.6	56	1.0	37	15.1	46	2.95	5.0	10.4	47	23.8	37	18.4	54	4,347†	70	66
506.7	66	639.1	60	1.7	2	26.1	2	5.92**	—	19.1	5	33.1	22	23.1	16	6,203	52	67
477.3	69	644.7	58	0.4	85	7.3	86	1.31	7.4	7.2	6	31.3	25	15.4	67	4,918	67	68
458.3	70	552.5	68	0.4	87	6.6	89	1.32	(43.6)	2.3	76	10.1	64	20.3	42	4,106	73	69
322.5	95	341.0	86	0.5	80	11.5	75	2.54	3,528.6	5.3	70	32.9	23	15.8	64	2,220	97	70
375.5	86	N.A.		0.5	79	9.9	80	N.A.	—	—		—		—		500	98	71
254.0	98	N.A.		0.4	89	10.0	78	N.A.	—	—		—		—		3,551	86	72
497.7	68	637.5	61	1.1	14	15.3	41	3.48	10.1	8.8	55	2.8	75	17.9	56	5,689	59	73
445.8	72	617.8	63	1.0	33	15.2	43	2.67	13.8	11.5	40	17.8	50	20.1	44	4,066	75	74
400.0	78	670.3	57	1.1	12	18.7	12	5.25	37.4	13.3	24	30.7	27	22.7	19	3,473	87	75
428.9	74	426.0	79	0.4	86	6.7	88	1.79	—	(1.2)	80	40.9	15	16.6	62	4,568	69	76
379.4	84	N.A.		0.5	81	8.4	83	N.A.	—	—		—		—		3,400	88	77
351.0	89	514.1	70	0.9	51	16.6	27	1.36	—	(3.7)	81	44.9	13	0.7	85	3,680	82	78
410.1	77	N.A.		0.8	65	12.8	71	2.93	10.6	8.1	60	106.9	2	25.9	7	3,980	76	79
372.5	87	430.9	78	0.9	59	14.0	58	3.34	52.5	9.0	54	15.5	57	19.6	46	4,142	72	80
362.5	88	424.0	80	0.0	95	0.3	95	(0.13)	(104.1)	—		31.1	26	13.8	74	3,820	79	81
393.1	80	509.4	74	0.9	44	14.2	56	3.21	102.8	42.8	2	24.1	35	26.4	6	2,948	94	82
341.9	92	513.5	71	0.9	50	15.5	36	2.60	11.4	14.0	21	19.9	42	24.7	13	2,579	95	83
415.5	75	242.6	87	0.2	93	2.2	94	0.45	—	(14.0)	84	(11.5)	85	4.4	83	3,779	81	84
334.9	93	405.0	82	0.8	67	14.1	57	4.72	25.9	12.9	29	38.7	17	25.2	11	4,996	66	85
429.6	73	577.7	65	1.0	29	13.6	60	4.05	8.9	7.4	62	2.9	74	19.2	48	3,579	85	86
395.2	79	513.3	72	1.0	40	13.8	59	2.51	2.9	13.7	22	28.3	28	25.5	8	3,916	77	87
379.2	85	431.5	77	0.9	54	12.9	65	4.92	26.5	8.1	61	95.7	3	18.6	51	3,637	83	88
389.2	81	N.A.		1.8	1	25.0	3	N.A.	—	—		—		—		2,534	96	89
508.6	65	1,115.4	37	1.6	3	16.5	28	3.93	28.9	17.6	7	35.1	20	30.0	2	3,145	91	90
323.2	94	349.7	85	0.9	48	14.9	48	2.57	23.2	12.0	36	21.3	41	26.7	4	3,293	89	91
342.9	91	403.6	83	0.8	64	12.8	67	3.05	160.7	6.7	67	44.8	14	18.5	53	3,038	93	92
455.6	71	561.4	67	1.1	13	12.8	69	1.77	3.5	9.2	53	17.6	51	18.2	55	3,895	78	93
385.9	82	354.1	84	0.6	76	8.6	82	2.70	22.2	(0.0)	78	23.3	39	8.0	80	4,100	74	94
384.7	83	518.2	69	1.0	43	12.7	72	3.08	2.0	14.0	19	24.9	34	22.1	25	3,808	80	95
253.7	99	N.A.		0.2	91	4.6	92	N.A.	—	—		—		—		176	100	96
287.5	97	433.6	76	0.9	57	15.1	45	1.28	36.7	16.1	9	(2.9)	81	25.3	10	3,080	92	97
412.2	76	588.6	64	1.3	7	14.8	49	2.90	5.5	10.5	46	6.7	68	21.1	39	4,343	71	98
232.3	100	N.A.		0.3	90	6.6	90	N.A.	—	—		—		—		205	99	99
342.9	90	458.7	75	1.0	28	14.4	52	3.20	6.3	12.3	34	10.6	63	22.3	22	3,293	90	100
121,978.6		130,387.5														1,071,501		

---

[16] Wholly owned by Mitsubishi Bank (No. 4 among last year's largest International Banks).

[17] Wholly owned by Sanwa Bank (No. 5 among last year's largest International Banks).

[18] Wholly owned by six European banks, all of which were ranked last year on FORTUNE's list of the Largest International Banks.

[19] Wholly owned by Fuji Bank (No. 3 among last year's largest International Banks).

[20] Wholly owned by Industrial Bank of Japan (No. 6 among last year's largest International Banks).

THE SERVICE 500

THE 50 LARGEST

RANK BY ASSETS 1988	1987	COMPANY	ASSETS[1] $ Millions	% change from 1987	REVENUES[2] $ Millions	Rank	% change from 1987	PROFITS $ Millions	Rank	% change from 1987	STOCKHOLDERS' EQUITY $ Millions	Rank
1	1	**AMERICAN EXPRESS** New York	142,704.0	22.6	22,934.0	2	29.1	1,038.0	2	94.7	5,048.0	5
2	2	**FEDERAL NAT'L MORTGAGE ASS'N** Washington	112,258.0	8.5	10,635.0	8	5.5	507.0	6	34.8	2,260.0	13
3	3	**SALOMON** New York	85,256.0	14.1	6,146.0	14	2.4	280.0	16	97.2	2,759.0	11
4	4	**AETNA LIFE & CASUALTY** Hartford	81,414.6	11.9	24,296.4	1	9.9	712.6	5	(22.6)	6,522.2	3
5	5	**MERRILL LYNCH** New York	64,402.7	16.7	10,547.2	9	(3.0)	463.2	9	18.6	3,484.2	9
6	6	**CIGNA** Philadelphia	55,824.5	4.4	17,889.4	5	5.8	472.2	8	(35.2)	5,237.6	4
7	7	**TRAVELERS CORP.** Hartford	53,332.0	6.3	18,986.0	4	8.7	103.0	34	(72.5)	4,570.0	6
8	●	**ITT** New York[3]	41,941.0	214.1	19,355.0	3	126.3	817.0	4	(19.8)	8,035.0	1
9	9	**MORGAN STANLEY GROUP** New York	40,050.8	35.0	4,108.8	16	30.5	394.6	11	70.9	1,599.4	22
10	10	**AMERICAN INTERNATIONAL GROUP** New York	37,408.7	34.0	13,613.2	6	20.7	1,217.0	1	16.8	7,002.5	2
11	11	**BEAR STEARNS COS.** New York[4]	32,170.8	27.4	1,887.9	32	6.4	142.9	28	(17.5)	1,024.7	28
12	●	**AMERICAN GENERAL** Houston	30,422.0	8.6	6,572.0	13	(8.2)	442.0	10	(21.5)	4,294.0	7
13	14	**STUDENT LOAN MARKETING ASS'N** Washington	28,627.8	25.2	2,272.3	30	36.2	225.1	21	24.3	800.6	32
14	13	**TRANSAMERICA** San Francisco	26,759.2	14.8	7,879.0	10	9.8	346.4	14	(18.9)	2,829.4	10
15	15	**LOEWS** New York	25,829.5	16.3	10,865.3	7	16.5	908.5	3	30.5	4,028.0	8
16	17	**HOUSEHOLD INTERNATIONAL** Prospect Heights, Ill.	21,032.4	24.0	2,637.4	27	(23.3)	246.7	19	11.4	1,173.6	26
17	16	**LINCOLN NATIONAL** Fort Wayne	20,964.3	16.4	7,312.3	11	5.1	146.7	27	(38.1)	2,244.3	15
18	19	**PAINE WEBBER GROUP** New York	17,933.9	38.4	2,512.3	28	3.1	42.4	42	(41.2)	1,051.2	27
19	38	**PRIMERICA** New York[5]	14,435.4	235.2	1,003.7	43	10.0	161.8	26	582.7	1,946.7	19
20	33	**HOME GROUP** New York	13,302.0	106.6	2,978.0	23	19.3	87.0	36	(49.5)	994.0	29
21	20	**CONTINENTAL** New York	13,302.0	9.5	6,608.3	12	(1.8)	.9	47	(99.6)	2,228.6	16
22	22	**CAPITAL HOLDING** Louisville, Ky.	12,963.3	24.8	2,045.9	31	(38.9)	189.9	23	10.3	1,257.5	24
23	23	**USF&G** Baltimore	12,361.1	21.9	5,581.8	15	15.7	247.0	18	(33.7)	2,054.1	17
24	21	**KEMPER** Long Grove, Ill.	12,078.3	12.4	3,487.5	21	(4.9)	223.8	22	(11.0)	1,740.6	21
25	24	**FIREMAN'S FUND** Greenwich, Conn.	11,190.0	16.5	3,704.0	19	(5.7)	235.0	20	(35.1)	1,838.0	20
26	27	**ST. PAUL COS.** St. Paul	10,382.2	23.6	3,630.8	20	7.9	355.3	13	(0.4)	2,015.2	18
27	26	**CHUBB** Warren, N.J.	9,741.2	13.1	3,980.5	17	7.2	359.6	12	9.0	2,254.8	14
28	25	**GENERAL RE** Stamford, Conn.	9,394.0	(0.5)	2,735.8	25	(20.7)	480.0	7	(6.0)	2,694.8	12
29	40	**SOUTHMARK** Dallas[6]	9,161.3	178.1	2,838.0	24	226.9	(125.1)**	50	(246.9)	696.2	36
30	29	**RELIANCE GROUP HOLDINGS** New York	9,045.1	26.0	3,730.4	18	10.9	23.6	43	(81.3)	366.1	46
31	30	**AON** Chicago	8,266.0	16.7	2,732.4	26	10.7	179.5	25	15.0	1,253.3	25
32	34	**INTEGRATED RESOURCES** New York	7,875.8	26.0	1,716.4	34	54.5	49.2	39	(4.7)	538.8	40
33	32	**SAFECO** Seattle	7,732.1	16.9	3,017.7	22	16.4	268.6	17	6.2	1,570.4	23
34	31	**BENEFICIAL** Wilmington, Del.	7,544.0	8.9	1,418.0	37	14.2	105.0	33	(39.9)	850.0	30
35	35	**LOMAS & NETTLETON FINANCIAL** Dallas[6]	6,645.0	19.4	1,202.3	40	90.1	(56.4)**	49	(224.0)	518.4	41
36	●	**FIRST EMPIRE STATE** Buffalo	5,908.1	14.1	537.1	46	14.7	44.5	41	10.4	388.1	44
37	42	**GEICO** Washington	3,060.6	7.5	1,756.9	33	11.2	189.0	24	6.3	707.4	35
38	43	**OLD REPUBLIC INTERNATIONAL** Chicago	3,005.5	7.4	1,102.1	41	0.7	50.9	38	(50.5)	558.0	38
39	44	**OHIO CASUALTY** Hamilton, Calif.	2,922.0	8.9	1,576.1	36	9.1	128.0	30	63.0	718.5	34
40	48	**LANDMARK LAND** Carmel, Calif.	2,695.5	26.3	481.8	48	82.9	16.0**	44	–	48.6	50
41	47	**HANOVER INSURANCE** Worcester, Mass.	2,649.1	15.2	1,579.7	35	11.9	119.9	31	7.1	660.6	37
42	45	**ALEXANDER & ALEXANDER SERVICES** New York	2,635.2	1.0	1227.7	38	9.7	67.5	37	(1.3)	371.6	45
43	●	**CHARLES SCHWAB** San Francisco	2,533.1	25.4	392.2	49	(15.6)	7.4	45	(71.2)	158.9	47
44	●	**STATESMAN GROUP** Des Moines	2,404.2	86.8	677.5	45	27.1	1.6	46	2,188	58.1	49
45	41	**DCNY** Wilmington, Del.	2,386.4	(21.2)	177.8	50	(35.8)	(8.5)	48	(128.4)	120.0	48
46	●	**PROGRESSIVE** Mayfield Heights, Ohio	2,307.1	29.2	1,227.3	39	22.7	108.1	32	15.7	417.2	43
47	●	**CINCINNATI FINANCIAL** Fairfield, Ohio	2,117.4	18.1	909.6	44	3.0	128.7	29	38.2	815.6	31
48	50	**ARGONAUT GROUP** Los Angeles	1,885.4	2.1	504.2	47	18.5	101.8	35	(40.4)	444.8	42
49	●	**MARSH & MCLENNAN COS.** New York	1,830.0	12.0	2,272.4	29	5.8	296.3	15	(1.9)	755.1	33
50	●	**ALLEGHANY** New York	1,629.8	4.9	1,006.0	42	(6.8)	46.0	40	(24.7)	544.9	39
		TOTALS	1,133,720.1		258,289.3			12,587.3			95,548.8	

● Not on last year's list

** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" on page 388.

† Average for the year; see the reference to "employees" on page 388.

‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and "earnings per share" on page 388.

§ Dividends paid on mandatory redeemable preferred stock subtracted from profits.

Total assets shown as of December 31, 1988, unless otherwise noted. Only assets of consolidated subsidiaries are included. Holding companies engaged in commercial banking, savings, or life, health, and accident insurance are listed here only when as

DIVERSIFIED FINANCIAL COMPANIES

MARKET VALUE		NET PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
		REVENUES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1987	1978-88 annual growth rate				1978-88 annual average				
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988 $		%	Rank	1988 %	Rank	%	Rank	Number	Rank	
13,931.4	1	4.5	31	0.7	33	20.6	10	2.43	102.5	8.5	16	19.8	19	18.3	17	100,188	2	1
5,351.6	7	4.8	27	0.5	39	22.4	9	6.43	38.0	6.4	23	69.3	1	15.1	28	2,500	43	2
3,120.1	13	4.6	30	0.3	41	7.9§	40	1.65	91.9	4.2	24	26.4	13	18.6	16	8,400	28	3
6,032.4	6	2.9	37	0.9	29	10.9	31	6.24	(21.5)	0.1	28	10.9	32	12.7	36	45,000	4	4
2,911.3	14	4.4	34	0.7	34	13.3	24	4.29	19.8	15.7	8	11.6	31	15.7	26	42,000	5	5
4,322.9	10	2.6	40	0.8	30	8.5§	37	5.68	(34.3)	(1.4)	31	14.1	26	8.0	38	48,615	3	6
4,185.1	11	0.5	45	0.2	45	2.3	46	0.92	(74.2)	(14.1)	35	5.7	35	13.8	32	36,000	7	7
7,755.3	3	4.2	35	1.9	19	10.2	33	5.70	(15.7)	2.0	27	16.2	23	12.8	35	117,000	1	8
2,098.0	19	9.6	9	1.0	28	24.7	6	10.26	71.2	–		64.2	3	–		6,414	33	9
13,588.4	2	8.9	13	3.3	13	17.4	17	7.40	16.7	18.4	3	13.6	29	18.2	19	31,200	8	10
1,241.3	30	7.6	20	0.4	40	13.9	23	1.56	(22.8)	–		27.3	12	–		6,063	34	11
4,460.7	9	6.7	22	1.5	23	10.2§	32	3.44	(11.3)	3.5	25	(2.6)	41	17.5	21	18,300	11	12
3,467.6	12	9.9	7	0.8	31	28.1	3	5.34	29.0	–		20.9	15	–		1,541	47	13
2,663.7	16	4.4	33	1.3	25	12.2	27	4.42	(19.2)	3.4	26	19.8	18	14.3	30	17,400	13	14
6,934.8	4	8.4	16	3.5	10	22.6	8	11.94	33.9	20.0	2	20.1	17	32.8	4	24,150	9	15
1,880.2	25	9.4	10	1.2	26	20.1§	11	6.80	22.1	7.9	18	48.2	4	20.0	13	12,000†	21	16
2,095.8	20	2.0	41	0.7	35	6.5	41	3.21	(38.2)	0.0	29	13.9	27	15.8	25	15,425	17	17
490.5	39	1.7	43	0.2	44	4.0	44	0.58	(73.3)	([illegible].2)	34	15.7	24	17.1	22	13,000	19	18
2,016.0	23	16.1	3	1.1	27	8.3	39	3.61	652.1	–		(1.7)	40	–		18,000	12	19
435.3	41	2.9	38	0.7	36	8.8	36	2.56	(46.9)	–		(6.8)	42	–		9,400	26	20
1,832.2	26	0.0	47	0.0	47	(0.2)	47	(0.09)	(102.4)	–		(10.5)	43	10.9	37	16,200	15	21
1,621.9	28	9.3	11	1.5	22	15.1	21	4.00	19.4	11.6	12	24.9	14	16.4	23	7,900	29	22
2,629.0	17	4.4	32	2.0	18	12.0	28	2.85	(21.5)	(3.1)	32	9.2	33	14.4	29	11,800	22	23
1,989.1	24	6.4	24	1.9	20	12.9	25	3.81	(7.5)	6.6	22	20.6	16	18.1	20	9,753	24	24
1,544.3	29	6.3	25	2.1	17	12.8	26	4.51	(21.0)	–		15.5	25	–		12,242	20	25
2,353.0	18	9.8	8	3.4	12	17.6	16	7.38	(0.9)	6.6	21	(1.1)	39	15.4	27	13,335	18	26
2,798.8	15	9.0	12	3.7	9	15.9	19	8.55	7.5	9.9	14	7.6	34	20.4	11	9,800	23	27
6,228.6	5	17.5	2	5.1	5	17.8	15	5.04	0.0	15.7	7	1.6	37	20.0	12	2,363	44	28
39.6	49	(4.4)	48	(1.4)	50	(18.0)	50	(3.60)**	(430.3)	–		(64.9)	50	–		33,000	6	29
354.1	43	0.6	44	0.3	43	6.4	42	0.32	(81.0)	–		(15.6)	45	–		9,500	25	30
2,084.1	21	6.6	23	2.2	16	14.3	22	2.79	18.2	6.8	20	28.5	10	19.1	15	15,900	16	31
107.6	48	2.9	39	0.6	37	9.1	34	2.42	(11.4)	12.3	11	(15.9)	46	13.0	34	4,254	40	32
1,830.9	27	8.9	14	3.5	11	17.1	18	4.10	9.3	9.8	15	(11.4)	44	18.2	18	8,700	27	33
1,116.5	31	7.4	21	1.4	24	11.6§	29	4.19	(40.9)	0.0		30.2	8	14.0	31	6,800	31	34
333.4	44	(4.7)	49	(0.8)	49	(11.6)§	49	(1.65)**	(210.7)	–		(16.8)	47	21.1	10	4,540	38	35
404.8	42	8.3	17	0.8	32	11.5	30	6.02	25.9	17.2	5	28.2	11	30.8	5	2,613	42	36
2,049.6	22	10.8	6	6.2	2	26.7	4	11.92	11.7	10.4	13	13.7	28	35.8	2	6,729	32	37
440.0	40	4.6	28	1.7	21	9.1	35	2.29	(52.8)	(0.4)	30	29.9	9	13.4	33	4,500	39	38
900.7	34	8.1	18	4.4	8	17.8	14	5.88	69.0	7.2	19	3.9	36	15.9	24	5,822	36	39
150.7	46	3.3	36	0.6	38	33.0	2	1.98**		13.5	9	68.4	2	24.4	7	4,200	41	40
593.2	36	7.6	19	4.5	7	18.2	13	5.82	7.2	17.4	4	16.7	22	23.6	9	5,760	37	41
1,066.0	33	5.5	26	2.6	15	18.2	12	1.63	0.6	(4.2)	33	38.2	7	3.2	40	16,300	14	42
257.1	45	1.9	42	0.3	42	4.7	43	0.27	–	–		12.5	30	–		2,211	45	43
33.5	50	0.2	46	0.1	46	2.8	45	0.04	–	(22.3)	36	(26.4)	49	6.3	39	1,115	48	44
141.0	47	(4.8)	50	(0.4)	48	(7.1)	48	(1.06)	(128.3)	–		19.7	20	[illegible]	1	414	50	45
859.6	35	6.8	15	4.7	6	25.9	5	3.86	19.5	30.3	1	(23.5)	48	33.3	3	5,854	35	46
1,094.4	32	14.2	4	6.1	3	15.8	20	7.96	37.0	16.6	6	39.1	6	24.2	8	1,600	46	47
552.8	37	20.2	1	5.4	4	22.9	7	9.41	(35.5)	–		47.1	5	–		879	49	48
4,461.6	8	13.0	5	16.2	1	39.2	1	4.09	0.7	12.8	10	19.0	21	19.4	14	22,800	10	49
551.7	38	4.6	29	2.8	14	8.4	38	7.27	(23.9)	8.4	17	(0.1)	38	26.8	6	6,860	30	50
129,402.3																826,440		

sets of those businesses represent less than 80% of the company's total.

Total revenues during the year, including any consolidated or nonfinancial revenues from manufacturing, retailing, etc. and revenues from discontinued operations when published. All companies on the list must have derived more than 50% of their revenues from financial businesses and have a publicly traded stock.

† Company was No. 45 on last year's FORTUNE 500 Industrial list.

** Figures are for fiscal year ended April 30, 1988.

§ Formed by the merger of Commercial Credit (No. 38 on last year's Diversified Financial list) and Primerica (No. 18 last year), December 15, 1988. Figures for revenues and profits reflect only the operations of the former Commercial Credit.

Figures are for fiscal year ended June 30, 1988.

THE SERVICE 500

THE 50 LARGEST

SAVINGS

RANK BY ASSETS 1988	1987	COMPANY	ASSETS $ Millions	% change from 1987	DEPOSITS $ Millions	Rank	LOANS[2] $ Millions	Rank	PROFITS $ Millions	Rank	% change from 1987
1	2	**H.F. AHMANSON** Los Angeles	40,258.0	32.0	29,505.5	1	34,260.4	1	202.0	2	0.9
2	3	**GREAT WESTERN FINANCIAL CORP.** Beverly Hills	32,815.2	14.6	22,207.1	2	29,143.6	2	248.4	1	98.2
3	4	**CALFED** Los Angeles	27,482.3	11.8	18,910.5	3	21,811.8	3	134.8	5	(19.2)
4	6	**GLENFED** Glendale, Calif.[3]	23,711.3	25.3	15,109.8	4	19,594.8	4	168.8	3	13.5
5	5	**MERITOR FINANCIAL GROUP** Philadelphia	17,172.0	(9.7)	12,209.3	5	14,442.7	5	(209.8)	49	–
6	10	**HOMEFED CORP.** San Diego[4]	17,008.7	20.6	12,208.3	6	14,382.7	6	111.3	6	8.0
7	12	**GOLDEN WEST FINANCIAL CORP.** Oakland	16,721.0	30.3	10,496.2	9	14,265.3	7	138.3	4	(5.8)
8	7	**GREAT AMER. FIRST SAVINGS BANK** San Diego	16,084.3	5.5	10,799.5	7	13,847.6	8	50.3	11	(42.9)
9	11	**CROSSLAND SAVINGS** Brooklyn	15,143.8	9.9	8,791.3	12	13,109.0	9	15.3	32	(84.8)
10	9	**GIBRALTAR FINANCIAL CORP.** Beverly Hills	15,011.1	0.2	8,939.3	10	12,025.9	10	(100.5)	46	–
11	8	**GOLDOME** Buffalo	14,962.5	(1.3)	10,529.3	8	10,084.2	13	(119.1)	47	(813.7)
12	•	**FRANKLIN SAVINGS ASSOCIATION** Ottawa, Kans.	13,419.4	43.2	3,326.8	37	7,707.4	18	80.7	7	13.5
13	15	**COLUMBIA SAVINGS & LOAN ASS'N** Beverly Hills	12,743.8	13.5	8,022.6	16	6,066.0	23	65.0	9	(45.6)
14	13	**COAST SAVINGS & LOAN ASS'N** Los Angeles	12,647.1	5.8	8,801.0	11	10,790.7	11	47.8	13	(16.3)
15	17	**IMPERIAL CORP. OF AMERICA** San Diego	12,263.1	12.8	8,281.5	15	8,893.9	16	14.9**	34	(71.1)
16	16	**DIME SAVINGS BANK OF NEW YORK** Garden City	12,007.2	9.7	8,723.3	13	10,197.9	12	80.1**	8	(29.5)
17	14	**FIRST FEDERAL OF MICHIGAN** Detroit	11,941.5	0.5	4,911.7	22	9,206.5	14	36.6	16	9.3
18	18	**EMPIRE OF AMERICA FEDERAL SAVINGS** Buffalo	11,281.4	3.9	8,325.7	14	9,001.8	15	(57.3)	44	(549.4)
19	19	**CITYFED FINANCIAL CORP.** Palm Beach, Fla.	10,584.5	(2.1)	7,188.7	17	7,761.6	17	(23.6)	43	(279.2)
20	20	**CENTRUST SAVINGS BANK** Miami[1]	9,764.1	25.6	6,221.8	19	6,951.5	20	50.1**	12	(18.6)
21	•	**STANDARD FEDERAL BANK** Troy, Mich.	9,573.1	12.4	5,271.3	20	7,237.4	19	63.3	10	(6.1)
22	21	**ANCHOR SAVINGS BANK** Hewlett, N.Y.[3]	7,946.5	7.3	6,595.9	18	6,509.3	21	6.7**	37	(92.1)
23	23	**ATLANTIC FINANCIAL FEDERAL** Bala Cynwyd, Pa.[1]	7,798.8	11.1	4,708.1	23	6,228.7	22	18.4**	29	(23.8)
24	24	**NORTHEAST SAVINGS** Hartford[6]	7,558.3	20.6	4,659.3	24	5,470.5	24	21.1**	25	(36.6)
25	28	**COMMERCIAL FEDERAL CORP.** Omaha[3]	6,655.5	15.5	3,206.8	40	5,349.3	26	1.2	40	(93.3)
26	38	**PACIFIC FIRST FINANCIAL CORP.** Tacoma	6,621.7	46.9	3,585.0	31	5,342.8	27	18.3**	30	(25.1)
27	29	**AMERICAN CAPITAL CORP.** Miami	6,402.6	11.3	3,631.3	30	5,468.5	25	3.8	38	2,049.7
28	30	**WASHINGTON MUTUAL SAVINGS BANK** Seattle	6,363.8	11.5	3,770.7	29	5,272.3	28	38.6	14	(3.6)
29	•	**TALMAN HOME FED. S&L ASS'N OF ILL.** Chicago	6,336.7	4.8	4,653.3	25	5,030.3	30	25.6	22	21.8
30	•	**PEOPLE'S BANK** Bridgeport, Conn.	6,321.4	11.0	5,056.9	21	5,212.5	29	36.6	15	(26.3)
31	36	**PERPETUAL FINANCIAL CORP.** Alexandria, Va.	5,852.9	28.1	3,985.2	28	4,469.6	32	31.2	20	62.6
32	31	**HOMESTEAD FINANCIAL CORP.** Millbrae, Calif.	5,751.1	4.3	3,169.1	41	3,722.8	42	(15.6)	42	(163.3)
33	25	**WESTERN SAVINGS & LOAN ASS'N** Phoenix	5,599.9	(7.5)	4,229.3	27	3,175.7	46	(201.7)	48	(703.9)
34	•	**BENJ. FRANKLIN FED. S&L ASS'N** Portland, Oreg.	5,469.4	11.6	3,273.7	39	4,185.1	36	15.1**	33	(15.0)
35	•	**AMERICAN S&L ASS'N. OF FLA.** Miami	5,310.8	83.3	3,166.3	42	3,430.8	45	N.A.		–
36	27	**TCF FINANCIAL CORP.** Minneapolis	5,258.7	(10.2)	3,445.8	34	4,427.3	33	21.5**	24	–
37	35	**HOWARD SAVINGS BANK** Newark, N.J.	5,220.5	7.0	4,509.6	26	3,614.4	44	35.1	18	0.7
38	32	**FLORIDA FEDERAL S&L ASS'N** St. Petersburg[1]	5,156.9	(4.7)	3,395.0	35	4,543.0	31	(68.9)	45	–
39	33	**FINANCIAL CORP. OF SANTA BARBARA**	5,012.8	(6.3)	2,191.7	50	4,390.2	34	(7.1)‡	41	(356.8)
40	43	**FARWEST FINANCIAL CORP.** Los Angeles[4]	4,760.1	28.0	3,320.0	38	3,142.4	47	8.6	36	90.2
41	40	**SEAMEN'S CORP.** Dallas	4,708.3	14.2	2,557.5	49	4,286.8	35	16.5	31	(9.9)
42	42	**CITADEL HOLDING CORP.** Glendale, Calif.	4,641.9	21.2	3,090.2	44	4,125.5	37	24.1	23	(9.1)
43	37	**AMERIFIRST BANK** Miami[5]	4,617.8	1.8	3,326.8	36	3,772.9	40	1.3	39	(88.3)
44	•	**CITIZENS SAVINGS FINANCIAL CORP.** Miami	4,576.3	52.6	2,955.9	45	3,680.1	43	13.3	35	16.9
45	41	**AMERICAN SAVINGS BANK** White Plains, N.Y.	4,536.4	11.9	3,464.4	33	3,766.0	41	33.3	19	(27.3)
46	•	**SFFED CORP.** San Francisco	4,499.1	54.5	2,773.2	47	3,993.5	38	19.3**	27	(3.9)
47	39	**OLD STONE CORP.** Providence	4,448.3	0.5	3,150.0	43	3,825.0	39	36.3	17	155.8
48	49	**DOWNEY S&L ASS'N** Newport Beach, Calif.	4,332.9	36.4	3,500.5	32	3,036.2	49	29.0	21	(12.8)
49	48	**ROCHESTER COMMUNITY SAV.** Rochester, N.Y.	4,238.3	29.5	2,797.3	46	3,064.9	48	18.4	28	(31.7)
50	•	**HOME OWNERS FED. S&L ASS'N** Boston	4,217.9	43.8	2,756.7	48	2,348.9	50	20.5**	26	(35.3)
		TOTALS	512,811.0		333,706.0		405,668.2		1,197.5		

• Not on last year's list.

** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" on page 388.

† Average for year; see reference to "employees" on page 388.

‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and "earnings per share" on page 388.

N.A. Not available.

[1] As of December 31, 1988. All companies on the list must have derived more than 50% of their consolidated revenues from chartered thrift institutions and have a publicly traded stock.

[2] Net of unearned discount and loan loss reserve. Figure includes lease financing.

SAVINGS INSTITUTIONS

STOCKHOLDERS' EQUITY $ Millions	Rank	MARKET VALUE $ Millions	Rank	PROFITS AS PERCENT OF ASSETS %	Rank	PROFITS AS PERCENT OF STOCKHOLDERS' EQUITY %	Rank	EARNINGS PER SHARE 1988 $	% change from 1987	1978-88 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1988 %	Rank	1978-88 annual average %	Rank	EMPLOYEES Number	Rank	
1,886.2	2	1,863.5	2	0.5	18	10.7	18	2.04	0.5	1.8	5	4.9	19	15.9	4	11,568	2	1
1,983.2	1	2,289.9	1	0.8	3	12.5	12	1.95	16.8	2.0	4	3.6	20	12.1	5	12,609	1	2
1.383.1	3	564.6	5	0.5	19	9.7	21	5.39	(19.2)	–		7.1	17	–		6,179	4	3
1,127.6	4	561.0	6	0.7	5	15.0	7	5.77	(15.3)	–		(6.1)	27	–		7,500	3	4
359.3	19	144.6	20	(1.2)	47	(58.4)	46	(5.98)	–	–		(2.6)	23	–		4,218	7	5
954.6	5	815.2	4	0.7	10	11.7	13	5.22	8.3	–		20.9	11	–		4,780	6	6
896.4	6	1,311.4	3	0.8	1	15.4	6	4.41	(6.0)	12.7	2	26.6	9	21.3	2	3,161	13	7
652.0	10	308.0	7	0.3	27	7.7	30	2.08	(43.5)	–		(5.9)	26	–		3,727	10	8
873.9	7	189.5	14	0.1	36	1.7	37	(1.81)	(134.3)	–		50.3	3	–		3,396	11	9
73.1	48	10.3	46	(0.7)	45	(137.5)	48	(4.88)	–	–		(64.3)	44	(17.8)	12	2,519	17	10
338.4	22	77.2	29	(0.8)	46	(35.2)	44	(4.34)	–	–		(32.0)	38	–		4,931	5	11
407.6	15	N.A.		0.6	12	19.8	2	2.39	3.5	–		–		–		961	43	12
676.1	9	158.5	18	0.5	17	9.6	23	1.55	(49.0)	–		18.3	12	–		926	45	13
485.5	12	216.3	13	0.4	25	9.8	20	3.63	(16.4)	–		(5.4)	25	–		2,285	20	14
276.6	28	77.3	28	0.1	35	5.4	35	1.03**	(70.2)	(14.2)	8	28.7	8	0.1	9	2,077	27	15
729.4	8	293.8	8	0.7	8	11.0	16	3.52**	(30.0)	–		(13.0)	33	–		2,950	14	16
420.9	14	154.1	19	0.3	28	8.7	25	3.31	10.0	–		73.5	1	–		1,827	30	17
155.7	39	22.5	41	(0.5)	44	(36.8)	45	(4.24)	(1,021.7)	–		(45.6)	41	–		3,795	9	18
326.2	23	55.9	32	(0.2)	42	(7.2)	41	(1.68)	(800.0)	–		(8.8)	28	–		4,074	8	19
377.7	17	34.6	40	0.5	16	13.3	10	3.32**	(29.4)	–		(9.3)	29	–		2,844	15	20
406.2	16	274.3	10	0.7	9	15.6	5	2.07	(8.8)	–		56.3	2	–		2,100	26	21
498.0	11	74.3	30	0.1	37	1.3	38	(0.42)**	–	–		–		–		3,288	12	22
222.9	30	10.3	47	0.2	33	8.2	27	3.05**	(37.6)	–		(39.1)	40	–		2,346	19	23
307.8	26	40.4	37	0.3	30	6.9	32	2.28**	(59.1)	–		(48.3)	42	–		1,438	37	24
129.2	44	46.3	33	0.0	40	0.9	39	0.19	(92.9)	–		(9.9)	30	–		1,412	38	25
240.6	29	187.4	15	0.3	32	7.6	31	2.41**	(25.8)	–		38.8	4	–		1,644	35	26
113.0	45	44.6	34	0.1	38	3.4	36	(0.13)	–	–		15.0	14	(0.4)	10	2,200†	22	27
350.2	20	241.5	12	0.6	11	11.0	14	2.56	(4.1)	–		1.8	21	–		1,992	28	28
313.4	25	87.6	26	0.4	24	8.2	28	2.64	20.5	–		18.2	13	–		1,886	29	29
453.7	13	N.A.		0.6	13	8.1	29	0.45	–	–		–		–		2,679	16	30
298.1	27	103.6	25	0.5	14	10.5	19	2.00	81.8	–		(11.0)	32	–		1,648	34	31
130.6	43	42.3	36	(0.3)	43	(11.9)	42	(1.34)	(168.4)	–		(20.5)	36	–		739	49	32
(85.1)	50	11.1	45	(3.6)	49	–		(19.05)	(1,001.0)	–		(72.7)	45	2.9	8	2,164	24	33
180.9	36	38.5	38	0.3	31	8.3	26	1.96**	(15.2)	–		(2.8)	24	–		1,599	36	34
344.3	21	N.A.		–		–		N.A.	–	–		–		–		1,278	40	35
159.2	38	86.7	27	0.4	23	13.5	9	2.99**	–	–		31.7	7	–		2,200	23	36
362.7	18	286.3	9	0.7	6	9.7	22	2.43	0.8	–		(10.5)	31	–		2,431	18	37
112.1	46	20.0	42	(1.3)	48	(61.5)	47	(7.33)	–	–		(52.8)	43	–		1,744	32	38
34.6	49	12.1	44	(0.1)	41	(20.5)	43	(1.18)‡	(402.6)	–		(28.1)	37	(10.6)	11	818	47	39
143.5	42	66.4	31	0.2	34	6.0	33	1.09	101.9	(2.1)	7	(16.8)	34	8.2	7	771	48	40
103.3	47	18.3	43	0.4	26	16.0	4	1.02	(7.3)	–		7.5	16	–		442	50	41
186.8	33	120.9	22	0.5	15	12.9	11	7.32	(5.2)	–		6.2	18	–		870	46	42
196.2	32	126.8	21	0.0	39	0.6	40	0.12	–	–		25.6	10	–		2,103	25	43
149.5	40	36.6	39	0.3	29	8.9	24	3.74	(0.3)	14.8	1	13.3	15	21.6	1	1,140	41	44
183.8	35	106.4	23	0.7	4	18.1	3	4.67	(30.8)	–		(1.9)	22	–		1,294	39	45
175.6	37	106.1	24	0.4	22	11.0	17	2.48**	(30.3)	–		(17.1)	35	–		958	44	46
144.4	41	185.3	16	0.8	2	25.2	1	3.99	380.7	0.6	6	37.7	5	11.8	6	2,256	21	47
210.0	40	182.8	17	0.7	7	13.8	8	2.70	(12.9)	9.1	3	37.1	6	16.2	3	1,119	42	48
321.1	24	243.2	11	0.4	21	5.7	34	1.34	(31.3)	–		–		–		1,652	33	49
186.2	34	43.2	35	0.5	20	11.0	15	1.80**	(52.8)	–		(34.3)	39	–		1,750	31	50
20,956.1		11,991.5														136,288		

Figures are for fiscal year ended June 30, 1988.

Name changed from Home Federal Savings & Loan Association December 30, 1988.

Figures are for fiscal year ended September 30, 1988.

* Figures are for fiscal year ended March 31, 1988.

Figures are for fiscal year ended October 31, 1988.

Name changed from Perpetual Savings Bank October 6, 1988.

Name changed from Far West Financial Corp. August 29, 1988.

Name changed from San Francisco Federal Savings & Loan Association July 1, 1988.

Figures are for fiscal year ended November 30, 1988.

THE SERVICE 500

THE 50 LARGEST

INSURANCE

RANK BY ASSETS 1988	1987	COMPANY	ASSETS[1] $ Millions	% change from 1987	PREMIUM AND ANNUITY INCOME[2] $ Millions	Rank	NET INVESTMENT INCOME $ Millions	Rank
1	1	**PRUDENTIAL OF AMERICA** Newark, N.J.*	116,197.0	6.8	14,396.7	2	7,436.9	1
2	2	**METROPOLITAN LIFE** New York*	94,232.0	6.9	15,487.1	1	7,261.0	2
3	3	**EQUITABLE LIFE ASSURANCE** New York[9]	50,415.5	2.3	4,917.3	6	3,130.0	5
4	4	**AETNA LIFE** Hartford[8]	48,884.9	7.0	8,266.1	3	3,345.0	4
5	5	**TEACHERS INSURANCE & ANNUITY** New York	38,631.4	16.3	3,064.9	12	3,641.3	3
6	6	**NEW YORK LIFE** New York*	35,153.8	10.4	6,929.3	4	2,758.2	6
7	9	**CONNECTICUT GENERAL LIFE** Bloomfield*	31,095.5	16.1	2,732.3	15	2,011.4	9
8	7	**TRAVELERS** Hartford[10]	30,672.2	7.3	4,200.9	9	2,185.1	8
9	8	**JOHN HANCOCK MUTUAL LIFE** Boston*	28,315.2	3.5	4,865.9	7	2,216.7	7
10	10	**NORTHWESTERN MUTUAL LIFE** Milwaukee*	25,349.0	12.1	3,542.1	10	1,829.4	10
11	11	**MASSACHUSETTS MUTUAL LIFE** Springfield*	22,404.1	12.7	2,825.5	13	1,648.1	12
12	12	**PRINCIPAL MUTUAL LIFE** Des Moines*	21,999.8	15.6	5,078.1	5	1,666.9	11
13	14	**NEW ENGLAND MUTUAL LIFE** Boston*	15,890.5	11.9	2,284.0	17	1,030.6	14
14	13	**MUTUAL OF NEW YORK** New York*	15,757.1	6.8	3,183.4	11	1,016.3	15
15	15	**EXECUTIVE LIFE** Los Angeles	12,803.7	12.3	619.7	47	1,303.8	13
16	17	**CONNECTICUT MUTUAL LIFE** Hartford*	10,825.0	9.0	2,195.4	19	76[illegible].5	19
17	18	**IDS LIFE** Minneapolis[11]	10,771.5	20.2	1,779.6	22	77[illegible].3	18
18	16	**MUTUAL BENEFIT LIFE** Newark, N.J.*	10,638.9	5.4	2,225.3	18	910.8	16
19	19	**STATE FARM LIFE** Bloomington, Ill.	9,590.2	13.4	1,437.6	30	827.5	17
20	20	**VARIABLE ANNUITY LIFE** Houston[12]	9,151.3	17.8	1,129.5	40	740.4	20
21	28	**ALLSTATE LIFE** Northbrook, Ill.[13]	8,818.1	47.7	4,298.0	8	(676.6)	50
22	21	**NATIONWIDE LIFE** Columbus, Ohio	8,700.9	19.2	1,566.1	26	515.4	26
23	22	**NEW YORK LIFE & ANNUITY** Wilmington, Del.	8,496.7	19.3	1,298.7	36	706.3	21
24	24	**AETNA LIFE & ANNUITY** Hartford[8]	7,943.8	20.1	1,383.6	31	449.4	28
25	23	**PACIFIC MUTUAL LIFE** Newport Beach, Calif.*	7,841.2	12.3	1,199.2	39	607.9	22
26	25	**EQUITABLE VARIABLE LIFE** New York	7,832.3	18.6	1,215.6	37	570.5	24
27	26	**LINCOLN NATIONAL PENSION** Fort Wayne[14]	7,677.8	21.4	1,655.6	23	402.7	32
28	27	**CONTINENTAL ASSURANCE** Chicago[15]	7,288.2	18.7	2,762.3	14	213.0	48
29	30	**TRANSAMERICA LIFE & ANNUITY** Los Angeles[16]	6,367.1	15.1	1,379.7	32	578.3	23
30	•	**HARTFORD LIFE** Hartford[17]	6,222.2	78.0	1,635.6	25	356.4	36
31	31	**PROVIDENT NAT'L ASSURANCE** Chattanooga	6,075.2	15.9	1,555.2	27	566.2	25
32	29	**SOUTHWESTERN LIFE** Dallas	5,963.8	2.8	133.8	50	284.2	45
33	34	**LINCOLN NATIONAL LIFE** Fort Wayne[14]	5,687.4	15.3	1,638.5	24	382.1	33
34	32	**PHOENIX MUTUAL LIFE** Hartford*	5,678.5	9.2	912.9	42	366.1	34
35	•	**JACKSON NATIONAL LIFE** Lansing, Mich.	5,623.5	54.4	1,961.8	21	482.5	27
36	33	**TRANSAMERICA OCCIDENTAL LIFE** Los Angeles[16]	5,564.4	11.0	1,300.7	35	404.8	31
37	46	**KEYSTONE PROVIDENT LIFE** Providence	5,165.2	34.7	1,509.8	28	432.2	29
38	35	**NORTHWESTERN NATIONAL LIFE** Minneapolis	5,073.2	7.6	1,376.6	33	198.5	49
39	41	**PENN MUTUAL LIFE** Philadelphia*	4,984.4	21.6	780.5	45	338.7	43
40	37	**GENERAL AMERICAN LIFE** St. Louis*	4,947.4	13.2	1,215.3	38	360.8	35
41	•	**AMERICAN FAMILY LIFE** Columbus, Ga.	4,906.9	20.6	1,963.7	20	263.1	47
42	36	**STATE MUTUAL OF AMERICA** Worcester, Mass.*	4,869.5	11.3	1,360.8	34	405.0	30
43	44	**KEMPER INVESTORS LIFE** Chicago[18]	4,645.8	18.1	865.2	43	353.5	40
44	38	**GUARDIAN OF AMERICA** New York*	4,618.4	10.8	2,348.7	16	354.6	37
45	42	**MINNESOTA MUTUAL LIFE** St. Paul*	4,465.7	11.5	1,027.3	41	343.8	42
46	40	**UNUM LIFE** Portland, Me.	4,385.7	5.8	627.7	46	353.7	39
47	39	**MUTUAL OF AMERICA LIFE** New York*	4,321.5	3.7	192.0	49	351.1	41
48	43	**FRANKLIN LIFE** Springfield, Ill.[19]	4,229.6	6.8	489.6	48	354.1	38
49	49	**HOME LIFE** New York*	4,034.5	13.9	1,443.8	29	301.1	44
50	•	**SUN LIFE OF AMERICA** Atlanta	3,992.9	78.9	837.8	44	275.5	46
		TOTALS	815,200.4		133,096.7		58,753.5	

DATA FOR ALL COMPANIES ARE CALCULATED ON THE STATUTORY ACCOUNTING BASIS REQUIRED BY STATE INSURANCE REGULATORY AUTHORITIES.

• Not on last year's list.
* Indicates a mutual company.
N.A. Not available.

[1] As of December 31, 1988.

Includes premium income from [illegible] accident, and health policies, annuities, and contributions to deposit administration funds.

After dividends to policyholders and federal income taxes, excluding realized capital gains and losses. Figures in parentheses indicate a loss.

After dividends to policyholders and federal income taxes, including realized capital gains and losses. Figures in parentheses indicate a loss.

Face value of all life policies, including variable life insurance, as of December 31, 1988.

LIFE INSURANCE COMPANIES

NET GAIN FROM OPERATIONS			NET INCOME			NET INCOME AS PERCENT OF ASSETS		LIFE INSURANCE IN FORCE		INCREASE IN LIFE INSURANCE IN FORCE				EMPLOYEES		
$ Millions	Mutual Rank	Stock Rank	$ Millions	Mutual Rank	Stock Rank	%	Rank	$ Millions	Rank	$ Millions	Rank	%	Rank	Number	Rank	
560.1	1		876.5	1		0.8	21	691,498.2	1	46,601.5	2	7.2	24	68,468	1	1
498.6	2		836.2	2		0.9	16	641,338.5	2	71,892.4	1	12.6	14	39,500	2	2
74.6	7		245.9	4		0.5	30	318,743.6	3	5,526.1	20	1.8	33	26,000	5	3
277.6		2	298.2		3	0.6	26	250,591.3	4	29,582.8	4	13.4	12	16,686	9	4
233.9		3	417.5		1	1.1	8	21,538.4	38	2,320.6	29	12.1	15	3,420	31	5
140.6	4		255.8	3		0.7	22	236,947.1	5	27,299.6	5	13.0	13	20,831	7	6
289.0		1	330.2		2	1.1	9	136,304.7	11	4,768.3	25	3.6	31	12,553	14	7
61.0		12	276.0		4	0.9	13	178,581.6	9	17,330.8	8	10.8	17	36,000	3	8
179.1	3		184.9	5		0.7	24	184,681.3	7	7,262.0	17	4.1	29	16,321	10	9
48.4	9		118.3	7		0.5	33	178,781.7	8	21,187.5	7	13.4	11	8,648	17	10
50.8	8		45.6	13		0.2	41	95,421.8	13	9,224.2	16	10.6	18	14,966	12	11
85.9	5		102.9	8		0.5	32	88,942.1	15	9,406.5	15	11.8	16	10,272	15	12
(47.3)	22		15.1	17		0.1	44	71,934.3	21	6,012.1	19	9.6	20	6,258	21	13
82.4	6		151.1	6		1.0	10	74,725.8	20	10,660.9	14	15.7	8	7,538	18	14
191.3		4	249.3		5	1.9	3	56,538.2	27	3,167.3	27	5.9	26	800	43	15
3.4	19		48.6	11		0.4	34	56,964.8	26	5,319.2	22	10.3	19	26,209	4	16
74.1		10	92.7		8	0.9	17	24,807.4	35	3,421.0	26	18.2	6	6,686	20	17
29.1	11		84.6	9		0.8	20	71,842.5	22	11,374.8	12	19.6	5	3,946	25	18
125.8		5	137.9		6	1.4	4	137,084.4	10	17,116.1	9	14.3	10	19,147	8	19
21.3		22	(3.1)		26	0.0	47	2.4	49	(0.5)	41	—		1,459	39	20
(74.5)		27	(68.5)		27	(0.8)	49	92,831.3	14	5,403.8	21	6.2	25	3,600	29	21
7.4		26	15.1		24	0.2	43	21,764.1	37	1,671.6	30	8.1	23	7,367	19	22
49.6		14	69.6		12	0.8	19	42,999.2	28	(974.6)	47	—		20,831	6	23
(100.2)		28	(95.2)		28	(1.2)	50	30,185.6	31	4,952.5	23	19.6	4	3,431	30	24
21.3	14		32.0	14		0.4	36	25,625.9	34	(7,164.5)	49	—		3,350	32	25
64.7		11	70.3		11	0.9	14	84,168.3	16	11,099.0	13	15.2	9	N.A.		26
33.1		17	31.2		19	0.4	37	128.7	48	(1.3)	42	—		348	45	27
80.0		8	66.9		14	0.9	12	77,670.9	19	2,587.0	28	4.1	30	14,600	13	28
7.5		25	4.3		25	0.1	45	279.0	46	46.4	39	—		1,061	40	29
21.8		21	27.6		21	0.4	35	21,258.9	39	605.7	37	3.1	32	333	46	30
27.0		20	21.6		23	0.4	38	0.0		0.0		—		46	48	31
77.1		9	77.9		10	1.3	5	39,799.6	29	(2,476.1)	48	—		3,100	33	32
51.9		13	33.5		17	0.6	28	141.9	47	(1.6)	43	—		3,093	34	33
22.9	12		27.2	16		0.5	31	70,386.6	23	895.2	35	1.3	34	3,019	35	34
49.1		15	67.1		13	1.2	6	64,148.7	25	16,605.8	10	—		934	42	35
39.7		16	46.6		15	0.8	18	218,924.6	6	31,926.5	3	—	1	3,977	24	36
28.1		19	46.1		16	0.9	15	2,654.2	43	19.8	40	0.7	35	232	47	37
32.3		18	30.6		20	0.6	27	68,025.7	24	4,929.9	24	8.1	22	9,170	16	38
4.1	18		8.8	20		0.2	42	22,675.0	36	(413.5)	44	—		2,115	37	39
2.5	20		14.1	18		0.3	39	126,716.3	12	22,344.5	6	21.4	3	2,427	36	40
101.9		6	107.7		7	2.2	1	6,354.2	40	1,106.9	34	—		14,994	11	41
30.8	10		45.6	12		0.9	11	31,976.0	30	607.7	36	—		4,256	23	42
14.5		23	32.0		18	0.7	23	1,826.5	44	439.9	38	35.9	2	379	44	43
11.6	15		55.0	10		1.2	7	84,058.3	17	12,172.4	11	16.9	7	4,704	22	44
1.6	21		1.9	21		0.0	46	79,657.1	18	6,864.6	18	9.4	21	3,823	26	45
21.4	13		27.6	15		0.6	25	2,956.6	42	(537.6)	45	—		3,647	28	46
7.2	16		(8.5)	22		(0.2)	48	1,414.8	45	(934.4)	46	—		1,001	41	47
83.8		7	84.4		9	2.0	2	26,859.9	32	1,169.9	33	4.6	28	3,807	27	48
5.9	17		9.8	19		0.2	40	25,833.3	33	1,309.0	32	5.3	27	2,072	38	49
10.5		24	21.6		22	0.5	29	4,530.8	41	1,589.9	31	—		N.A.		50
3,714.5			5668.1					4,793,121.9		425,317.4				467,425		

Change between December 31, 1987, and December 31, 1988.

Includes home office, field force, and full-time agents.

Wholly owned by Aetna Life & Casualty (F. 4).

Wholly owned by Cigna (F. 6).

Wholly owned by Travelers Corp. (F. 7).

Wholly owned by American Express (F. 1).

Wholly owned by American General (F. 12).

Wholly owned by Sears Roebuck (R. 1).

Wholly owned by Lincoln National (F. 17).

Wholly owned by CNA Financial Corp., which is 82% owned by Loews (F. 15).

Wholly owned by Transamerica (F. 14).

Wholly owned by [illegible] (F. 6).

Wholly owned by Kemper (F. 24).

Wholly owned by American Brands (No. 58 on the FORTUNE 500 industrial list).

THE SERVICE 500

THE 50 LARGEST

RETAILING

RANK BY SALES 1988	1987	COMPANY	SALES $ Millions	SALES % change from 1987	PROFITS $ Millions	PROFITS Rank	PROFITS % change from 1987	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank
1	1	**SEARS ROEBUCK** Chicago	50,251.0	3.7	1,453.7	1	(11.9)	77,951.6	1	14,054.9	1
2	2	**K MART** Troy, Mich.	27,301.0	6.5	803.0	4	16.0	12,126.0	3	5,009.0	2
3	5	**WAL-MART STORES** Bentonville, Ark.	20,649.0	29.4	837.2	2	33.4	6,359.7	9	3,007.9	6
4	4	**KROGER** Cincinnati	19,053.0	7.9	34.5	40	(86.0)	4,614.0	13	2,678.5	7
5	7	**AMERICAN STORES** Irvine, Calif.	18,478.4	29.5	98.3	26	(36.3)	7,010.4	7	922.1	16
6	6	**J.C. PENNEY** Dallas	14,833.0	(3.3)	807.0	3	32.7	12,254.0	2	3,957.0	3
7	3	**SAFEWAY STORES** Oakland	13,612.4	(25.6)	31.2	41	–	4,371.7	14	(368.4)	49
8	9	**DAYTON HUDSON** Minneapolis	12,204.0	14.3	287.0	10	25.7	6,523.0	8	1,861.0	9
9	10	**MAY DEPARTMENT STORES** St. Louis	11,921.0	15.6	534.0	6	20.3	8,144.0	5	3,050.0	5
10	13	**GREAT ATLANTIC & PACIFIC TEA** Montvale, N.J.	9,531.8	21.7	103.4	24	8.9	2,243.2	21	851.3	17
11	11	**WINN-DIXIE STORES** Jacksonville, Fla.	9,007.7	2.3	116.7	21	3.9	1,514.0	35	726.3	21
12	14	**F.W. WOOLWORTH** New York	8,088.0	13.4	288.0	9	14.7	3,535.0	16	1,844.0	10
13	12	**SOUTHLAND** Dallas	7,950.3	(1.6)	(216.2)	50	–	4,861.5	12	(387.6)	50
14	16	**MARRIOTT** Bethesda, Md.	7,370.0	13.0	232.0	13	4.0	5,981.0	10	710.0	23
15	18	**MELVILLE** Harrison, N.Y.	6,780.4	14.3	354.5	7	24.2	2,736.2	18	1,706.3	11
16	19	**ALBERTSON'S** Boise, Idaho	6,773.1	15.4	162.5	14	29.6	1,591.0	33	800.5	18
17	20	**R.H. MACY** New York	5,729.1	10.0	(188.2)‡	49	–	5,514.6	11	(247.4)	48
18	21	**MCDONALD'S** Oak Brook, Ill.	5,566.3	13.7	645.9	5	8.3	8,158.7	4	3,412.8	4
19	23	**MONTGOMERY WARD HOLDING** Chicago	5,371.0[10]	15.8	139.0[10]	18	6.9	3,825.0	15	149.0	42
20	25	**WALGREEN** Deerfield, Ill.	4,883.5	14.1	129.1	19	24.7	1,511.9	36	712.6	22
21	26	**PUBLIX SUPER MARKETS** Lakeland, Fla.	4,803.7	15.7	102.4	25	17.4	1,173.2	40	756.8	19
22	24	**SSC HOLDINGS** Boston	4,669.6	7.5	(21.5)	46	(138.6)	1,993.1	26	116.2	43
23	8	**FEDERATED DEPARTMENT STORES** Cincinnati	4,541.7[10]	(59.1)	158.9[10]	15	(49.2)	7,912.8	6	1,912.8	8
24	30	**PRICE** San Diego	4,140.5	27.9	94.8	27	29.2	993.4	44	479.5	31
25	28	**THE LIMITED** Columbus, Ohio	4,070.8	15.4	245.1	12	4.2	2,145.5	22	946.2	15
26	31	**TOYS "R" US** Paramus, N.J.	4,000.2	27.5	268.0	11	31.4	2,555.0	19	1,423.7	13
27	•	**VONS COS.** El Monte, Calif.	3,916.6	831.2	(23.9)	47	–	1,673.4	31	214.0	40
28	32	**FOOD LION** Salisbury, N.C.	3,815.4	29.2	112.5	23	31.2	1088.2	42	430.8	32
29	29	**TANDY** Fort Worth	3,793.8	9.9	316.4	8	30.5	2,530.1	20	1,603.1	12
30	•	**TW SERVICES** Paramus, N.J.	3,573.7	43.4	53.7	35	14.0	2,106.1	24	501.1	30
31	44	**AMES DEPARTMENT STORES** Rocky Hill, Conn.	3,362.9	59.2	47.2	37	38.3	2,129.6	23	601.2	26
32	35	**SERVICE MERCHANDISE** Nashville	3,092.8	13.7	76.5	30	147.9	1,710.7	30	380.7	34
33	27	**ALLIED STORES** Cincinnati	2,977.9	(24.7)	51.4	36	–	3,501.6	17	156.3	41
34	37	**GIANT FOOD** Landover, Md.	2,721.3	7.6	75.6	31	62.7	885.0	45	355.6	35
35	33	**CARTER HAWLEY HALE STORES** Los Angeles	2,617.1	(8.8)	17.7	42	–	1,671.6	32	(230.2)	47
36	40	**CIRCLE K** Phoenix	2,613.8	14.2	60.4	33	22.2	1,535.8	34	283.5	37
37	41	**DILLARD DEPARTMENT STORES** Little Rock, Ark.	2,558.4	16.0	113.8	22	24.8	2,067.5	25	752.2	20
38	39	**LOWE'S COS.** North Wilkesboro, N.C.	2,516.9	3.1	69.2	32	13.1	1,085.8	43	586.9	27
39	38	**RITE AID** Shiremanstown, Pa.	2,486.3	41.5	144.6	16	85.4	1,224.2	39	571.0	28
40	36	**REVCO D.S.** Twinsburg, Ohio	2,409.3	(10.1)	(88.5)	48	–	1,844.2	28	(161.7)	46
41	42	**UNITED STATES SHOE** Cincinnati	2,343.0	8.1	13.0	44	(75.1)	1,111.4	41	516.6	29
42	46	**NORDSTROM** Seattle	2,327.9	21.2	123.3	20	33.0	1,511.7	37	639.9	24
43	•	**GENERAL CINEMA** Chestnut Hill, Mass.[15,16]	2,323.8	120.7	87.7	28	26.4	1,897.5	27	604.9	25
44	43	**MERCANTILE STORES** Wilmington, Del.	2,265.5	5.1	144.5	17	11.5	1,451.8	38	980.9	14
45	45	**BEST PRODUCTS** Richmond	2,088.3	1.1	(4.4)	45	(114.4)	1,735.6	29	89.3	45
46	•	**FRED MEYER** Portland, Oreg.	2,073.5	12.2	36.7	39	14.4	686.6	47	258.2	38
47	•	**COSTCO WHOLESALE** Kirkland, Wash.	2,029.9	44.9	14.4**	43	184.1	452.4	50	106.1	44
48	•	**HOME DEPOT** Atlanta	1,999.5	37.6	76.8	29	41.9	699.2	46	382.9	33
49	•	**BRUNO'S** Birmingham, Ala.	1,982.3	40.0	40.7	38	23.4	591.8	48	249.7	39
50	47	**LONGS DRUG STORES** Walnut Creek, Calif.	1,925.5	8.6	55.9	34	13.5	507.6	49	309.1	36
		TOTALS	355,395.8		9,115.5			233,298.6		60,267.3	

● Not on last year's list

** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" on page 388

† Average for the year; see the reference to "employees" on page 388

‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and "earnings per share" on page 388

N.A. Not available

§ Dividends paid on mandatory redeemable preferred stock subtracted from profits

Net sales include operating revenues from nonretailing activities and revenues from discontinued operations when they are published. All figures are for the fiscal year ended January 31, 1989, unless otherwise noted. Sales of subsidiaries are included when they are consolidated. All companies on the list must have derived more than 50% of their revenues from retail operations.

Figures are for fiscal year ended December 31, 1988.

RETAILING COMPANIES

MARKET VALUE $ Millions	Rank	NET PROFITS AS PERCENT OF REVENUES %	Rank	ASSETS %	Rank	STOCKHOLDERS' EQUITY %	Rank	EARNINGS PER SHARE 1988 $	% change from 1987	1978-88 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1988 %	Rank	1978-88 annual average %	Rank	EMPLOYEES Number	Rank	
16,952.0	2	2.9	21	1.9	38	10.3	37	3.84	(11.7)	3.0	30	28.8	21	13.8	31	520,000	1	1
7,603.3	4	2.9	19	6.6	21	16.0	25	4.00	17.6	8.2	27	22.5	23	13.1	34	355,000	2	2
20,576.0	1	4.1	12	13.2	1	27.8	4	1.48	33.3	37.7	1	21.3	25	47.0	2	223,000	4	3
879.8	31	0.2	44	0.7	43	0.7§	42	0.24	(92.0)	(17.0)	34	123.8	2	25.9	16	160,000	8	4
1,850.0	22	0.5	42	1.4	40	10.7	36	2.54	(39.4)	9.3	26	16.5	30	22.6	22	165,000	7	5
6,765.0	5	5.4	7	6.6	22	20.4	10	6.02	46.5	11.3	21	21.6	24	18.4	29	190,000	5	6
N.A.		0.2	43	0.7	44	—		N.A.	—	—		—		—		107,200	13	7
3,669.3	11	2.4	28	4.4	30	15.4	27	3.45	43.2	2.1	31	47.4	14	19.9	27	135,000	10	8
5,833.9	6	4.5	10	6.6	23	17.5§	22	3.63	25.2	10.5	22	28.9	20	21.8	24	152,000	9	9
1,965.8	20	1.1	38	4.6	28	12.2	34	2.71	8.4	30.4	3	20.7	26	23.4	20	83,000	16	10
1,914.0	21	1.3	37	7.7	19	16.1	24	2.87	5.5	4.9	29	3.9	35	15.4	30	83,800	15	11
3,384.0	13	3.6	15	8.1	17	15.6	26	4.47	17.3	7.5	28	54.8	10	24.7	18	132,185	11	12
N.A.		(2.7)	48	(4.4)	49	—		(1.22)	—	—		—		—		50,724	22	13
3,655.0	12	3.1	17	3.9	32	32.7	3	1.95	16.8	22.7	6	6.1	34	30.2	10	229,600	3	14
4,454.8	9	5.2	9	13.0	2	20.8§	9	3.26	24.2	14.0	19	44.8	15	23.3	21	96,500	14	15
2,911.4	15	2.4	27	10.2	10	20.3	11	2.44	29.8	15.2	18	51.8	12	26.6	14	50,000	23	16
N.A.		(3.3)	49	(3.4)	48	—		N.A.	—	—		—		—		70,000	17	17
10,208.2	3	11.6	1	7.9	18	18.9	18	3.43	9.2	15.8	16	10.7	32	19.7	28	169,000	6	18
N.A.		2.6	25	3.6	33	93.3	1	N.A.	—	—		—		—		49,200	24	19
2,306.8	17	2.6	24	8.5	15	18.1	20	2.10	25.0	16.6	14	0.3	36	29.0	13	45,000	26	20
N.A.		2.1	31	8.7	13	13.5	33	2.05	16.5	—		—		—		57,791	20	21
N.A.		(0.5)	46	(1.1)	46	(18.5)	45	N.A.	—	—		—		—		44,000	27	22
N.A.		3.5	16	2.0	37	8.3	39	N.A.	—	—		—		—		63,700	18	23
2,021.2	18	2.3	30	9.5	12	19.8	15	1.93	28.7	—		14.5	31	—		11,077	49	24
5,423.0	8	6.0	5	11.4	5	25.9	6	1.36	8.8	33.6	2	59.6	8	47.2	1	56,700	21	25
5,593.4	7	6.7	3	10.5	8	18.8	19	2.04	30.8	29.0	4	17.9	28	41.8	4	33,731	33	26
687.2	35	(0.6)	47	(1.4)	47	(11.2)	44	(0.77)	—	—		55.9	9	29.4	11	34,854	32	27
3,298.8	14	2.9	18	10.3	9	26.1	5	0.35	29.6	18.9	12	(26.7)	40	36.5	6	35,531	30	28
4,060.8	10	8.3	2	12.5	4	19.7	16	3.54	31.1	17.8	13	26.1	22	20.3	26	37,000	29	29
1,576.3	26	1.5	35	2.6	35	10.7	35	1.10	13.4	—		85.2	4	—		120,000	12	30
614.3	37	1.4	36	2.2	36	7.9	40	1.20	31.9	15.8	15	35.9	17	29.1	12	61,000	19	31
774.6	33	2.5	26	4.5	29	20.1	12	1.51	143.5	9.8	23	414.6	1	8.7	35	33,329	34	32
N.A.		1.7	34	1.5	39	32.9	2	N.A.	—	—		—		—		37,300	28	33
1,564.8	27	2.8	22	8.5	14	21.3	8	2.51	61.9	22.5	7	41.7	16	41.9	3	22,700	41	34
203.9	40	0.7	40	1.1	42	—		0.72	—	(11.8)	33	(1.5)	38	22.4	23	35,000	31	35
667.9	36	2.3	29	3.9	31	20.0§	14	1.15	23.7	19.9	11	10.0	33	20.4	25	24,544	39	36
1,792.2	23	4.4	11	5.5	25	15.1	28	3.53	24.7	25.3	5	72.8	6	37.1	5	23,114	40	37
928.5	29	2.7	23	6.4	24	8.8§	38	1.83	18.8	9.7	24	33.0	19	13.7	32	14,774	47	38
1,508.0	28	5.8	6	11.8	4	25.3	7	3.50	85.2	21.5	9	(7.5)	39	23.4	19	27,798	35	39
N.A.		(3.7)	50	(4.8)	50	—		(27.40)	—	—		—		—		27,500†	37	40
796.0	32	0.6	41	1.2	41	2.5	41	0.29	(75.0)	(7.6)	32	82.5	5	25.9	17	45,898	25	41
2,792.2	16	5.3	8	8.2	16	19.3	17	1.51	33.6	21.0	10	54.4	11	30.3	9	25,000†	38	42
1,741.4	24	3.8	14	4.6	27	14.5	30	1.19	26.6	15.7	17	34.2	18	31.1	8	27,714	36	43
1,690.2	25	6.4	4	10.0	11	14.7	29	3.92	11.4	13.7	20	17.7	29	26.3	15	22,000†	42	44
N.A.		(0.2)	45	(0.3)	45	(4.9)	43	N.A.	—	—		—		—		18,214	44	45
467.4	39	1.8	33	5.3	26	14.2	31	1.50	14.5	—		51.8	13	—		20,000	43	46
558.5	38	0.7	39	3.2	34	13.6	32	0.57**	185.0	—		92.4	3	—		6,200	50	47
2,002.9	19	3.8	13	11.0	7	20.0	13	1.50	32.7	—		69.4	7	—		15,000	46	48
886.7	30	2.1	32	6.9	20	16.3	23	0.50	28.2	22.1	8	(0.2)	37	36.2	7	17,000†	45	49
739.7	34	2.9	20	11.0	6	18.1	21	2.75	18.0	9.4	25	19.7	27	13.1	33	12,400	48	50
137,319.3																4,077,078		

Figures reflect acquisition of Lucky Stores (No. 15 on last year's Retailing list) June 2, 1988.

Figures are for fiscal year ended February 29, 1988.

Figures are for fiscal year ended June 30, 1988.

Figures are for fiscal year ended July 31, 1988.

Formed as a holding company for Montgomery Ward June 23, 1988.

Figures are for fiscal year ended August 31, 1988.

Formed as a holding company for Stop & Shop Cos. June 22, 1988.

Figures are FORTUNE estimates.

Company was No. 31 on last year's Diversified Service list.

Figures are for fiscal year ended April 30, 1988.

Figures are for fiscal year ended March 31, 1988.

Figures are for fiscal year ended May 31, 1988.

Figures are for fiscal year ended October 31, 1988.

Company was No. 313 on last year's FORTUNE 500 Industrials.

THE SERVICE 500

THE 50 LARGEST

TRANSPORTATION

RANK BY REVENUES 1988	1987	COMPANY	REVENUES $ Millions	% change from 1987	PROFITS $ Millions	Rank	% change from 1987	ASSETS $ Millions	Rank	STOCKHOLDERS' EQUITY $ Millions	Rank
1	2	**UNITED PARCEL SERVICE** Greenwich, Conn.	11,032.1	13.9	758.7	2	(3.2)	6,935.5	7	3,180.8	6
2	1	**UAL** Elk Grove, Ill.[2]	9,014.6	(18.1)	1,124.3	1	235.5	6,700.7	9	1,226.1	12
3	5	**AMR** Fort Worth	8,824.3	22.6	476.8	5	140.3	9,722.4	4	3,298.0	5
4	4	**CSX** Richmond	8,668.0	7.8	147.0	14	6.5	13,026.0	1	3,392.0	4
5	3	**TEXAS AIR** Houston	8,572.9	1.2	(718.6)	50	–	8,198.7	5	(222.3)	49
6	9	**DELTA AIR LINES** Atlanta[3]	6,915.4	30.0	306.8	6	16.3	5,748.4	11	2,208.8	7
7	7	**UNION PACIFIC** Bethlehem, Pa.[4]	6,794.0	14.3	644.0	3	10.5	12,228.0	2	4,482.0	2
8	16	**USAIR GROUP** Arlington, Va.	5,707.0	90.2	165.0	11	(15.2)	5,348.9	12	2,069.5	8
9	10	**NWA** Eagan, Minn.	5,650.4	9.9	135.1	15	31.1	4,372.0	14	1,633.7	10
10	8	**SANTA FE SOUTHERN PACIFIC** Chicago	4,934.9	(14.2)	(46.5)	46	(112.4)	6,824.3	8	482.9	22
11	6	**BURLINGTON NORTHERN** Fort Worth	4,699.5	(29.0)	155.8‡	12	(57.8)	6,330.3	10	918.0	13
12	11	**NORFOLK SOUTHERN** Norfolk, Va.	4,461.6	8.5	635.1	4	268.4	10,059.1	3	5,152.6	1
13	12	**TRANS WORLD AIRLINES** Mt. Kisco, N.Y.	4,361.1	7.5	249.7	8	135.2	4,107.7	15	(31.3)	48
14	13	**PAN AM** New York	4,165.1	15.9	(72.7)	48	–	2,149.3	17	(305.8)	50
15	15	**FEDERAL EXPRESS** Memphis[5]	3,882.8	21.5	187.7	10	–	3,008.5	16	1,330.7	11
16	14	**CONSOLIDATED RAIL** Philadelphia	3,490.0	7.5	306.0	7	2.3	7,224.0	6	4,043.0	3
17	17	**CONSOLIDATED FREIGHTWAYS** Menlo Park, Calif.	2,689.1	17.1	113.2	16	51.7	1,536.1	20	766.2	14
18	•	**SOUTHERN PACIFIC TRANS.** San Francisco	2,412.1	–	219.4	9	–	4,709.0	13	1,856.3	9
19	18	**ROADWAY SERVICES** Akron	2,184.5	14.4	80.2	20	58.9	1,192.8	25	670.4	16
20	19	**AMERICAN PRESIDENT COS.** Oakland	2,131.2	14.5	81.3	18	2.8	1,710.5	19	616.7	18
21	20	**YELLOW FREIGHT SYSTEM** Overland Park, Kans.	2,016.5	14.6	69.0	21	67.0	1,020.7	27	409.0	24
22	22	**TIGER INTERNATIONAL** Los Angeles	1,357.5	10.2	89.5	17	54.9	1,011.9	28	155.9	29
23	23	**EMERY AIR FREIGHT** Wilton, Conn.	1,270.1	4.0	(50.3)	47	–	733.2	31	102.8	35
24	24	**CNW** Chicago	995.5	4.0	81.0‡	19	194.0	1,727.0	18	493.5	21
25	25	**SOUTHWEST AIRLINES** Dallas	841.8	8.2	58.0	22	187.5	1,308.4	23	567.4	20
26	27	**ALASKA AIR GROUP** Seattle	814.4	14.7	37.5	26	51.7	730.2	32	306.5	25
27	26	**ARKANSAS BEST** Fort Smith	798.0	9.0	(3.3)	40	(138.0)	553.2	35	31.2	42
28	35	**AMERICA WEST AIRLINES** Phoenix	775.7	34.8	9.4**	32	–	639.5	33	58.0	38
29	30	**AIRBORNE FREIGHT** Seattle	768.0	21.5	7.[illegible]	36	19.3	422.1	36	127.4	33
30	28	**ALEXANDER & BALDWIN** Honolulu	701.9	7.1	153.4	13	27.5	1,070.5	26	599.3	19
31	31	**UNIGROUP** Fenton, Mo.[6]	697.6	10.4	6.3	38	41.9	193.0	44	40.8	39
32	33	**CAROLINA FREIGHT** Cherryville, N.C.	650.2	9.3	10.0	31	15.5	347.4	39	133.7	31
33	29	**MAYFLOWER GROUP** Carmel, Ind.	611.6	(4.8)	(13.6)‡	43	–	365.0	38	11.8	45
34	39	**PRESTON** Preston, Md.	593.7	17.5	7.3	35	20.7	337.7	40	113.9	34
35	32	**SOO LINE** Minneapolis	570.5	(7.0)	15.6	29	–	904.5	30	268.8	28
36	37	**ILLINOIS CENTRAL RAILROAD** Chicago	556.4	0.4	45.9	25	2,960.0	1,414.2	21	658.1	17
37	41	**AIR EXPRESS INTERNATIONAL** Darien, Conn.	526.4	40.3	8.2	33	(19.9)	186.6	45	33.4	41
38	•	**TRAILER TRAIN** Chicago	515.4	(2.4)	48.0	23	(11.9)	1,268.2	24	423.4	23
39	38	**KANSAS CITY SOUTHERN IND.** Kansas City, Mo.	507.4	(3.6)	(31.5)	45	(278.1)	979.1	29	291.6	26
40	43	**MIDWAY AIRLINES** Chicago	412.0	18.8	6.5**	37	(65.3)	278.3	42	82.4	37
41	47	**J.B. HUNT TRANSPORT** Lowell, Ark.	392.6	37.1	33.0	27	27.2	300.2	41	150.1	30
42	40	**AMERICAN CARRIERS** Overland Park, Kans.	389.2	(17.6)	(99.4)	49	–	163.4	47	(15.4)	47
43	42	**GRAND TRUNK** Detroit	388.6	5.9	8.2	34	(35.6)	564.4	34	288.8	27
44	45	**HAL** Honolulu	354.0	18.4	(8.8)	41	–	167.5	46	4.5	46
45	44	**TRANSCON** Orange, Calif.	322.0	(3.4)	(23.7)	44	–	114.2	48	28.9	43
46	46	**OVERSEAS SHIPHOLDING GROUP** New York	307.4	4.7	46.4	24	30.6	1,318.2	22	695.7	15
47	49	**BRANIFF** Dallas[9]	297.4	24.2	(12.2)	42	–	104.5	50	33.6	40
48	•	**HARPER GROUP** San Francisco	283.2	27.1	14.1	30	59.9	225.8	43	94.7	36
49	50	**CHEMICAL LEAMAN** Exton, Pa.	241.2	6.4	0.6	39	(45.7)	112.1	49	27.2	44
50	•	**MIDLAND ENTERPRISES** Cincinnati	222.5	9.7	15.6	28	16.6	388.3	37	131.7	32
		TOTALS	129,769.3		5,476.0			140,081.4		43,117.0	

• Not on last year's list.

** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" on page 388.

† Average for the year; see the reference to "employees" on page 388.

‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and "earnings per share" on page 388.

§ Dividends paid on mandatory redeemable preferred stock subtracted from profits.

N.A. Not available.

Consolidated operating revenues include those from nontransportation activities and sales from discontinued operations when these are published. All figures are for the year ended December 31, 1988, unless otherwise noted. All companies must derive more than 50% of their operating revenues from carrier opera-

TRANSPORTATION COMPANIES

MARKET VALUE		NET PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
		REVENUES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1987	1978-88 annual growth rate				1978-88 annual average				
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1988/$		%	Rank	1988 %	Rank	%	Rank	Number	Rank	
N.A.		6.9	14	10.9	4	23.9	5	4.69	1.1	27.8	1	—		—		219,400	1	1
2,744.1	8	12.5	4	16.8	1	91.7	1	37.87	529.1	12.2	6	53.1	7	15.4	17	68,500	3	2
3,729.0	3	5.4	17	4.9	16	14.5	14	7.92	141.5	6.4	13	52.1	9	15.5	15	77,100	2	3
3,442.1	5	1.7	31	1.1	38	4.3§	36	0.93	5.7	(2.1)	24	14.0	29	23.1	5	53,968†	6	4
540.5	22	(8.4)	49	(8.8)	47	—		(18.88)	—	—		9.2	31	0.8	28	67,937	4	5
3,279.6	6	4.4	21	[illegible].3	13	13.9	17	6.30	6.8	6.7	11	38.5	15	11.8	24	54,920	5	6
7,503.2	1	9.5	5	5.3	14	14.4	15	5.65	10.8	7.4	10	23.1	24	13.5	21	47,259†	9	7
1,970.1	11	2.9	27	3.1	29	8.0	27	3.81	(27.8)	(0.6)	21	2.6	32	17.6	11	47,600	8	8
2,998.9	7	2.4	29	3.1	28	8.3	26	4.63	29.0	4.9	17	45.0	13	8.5	25	35,532	10	9
3,542.8	4	(0.9)	41	(0.7)	41	(9.6)	39	(0.30)	(112.7)	—		1.4	33	23.4	4	21,589	20	10
1,715.3	13	3.3	26	2.5	31	16.6§	8	2.04‡	(58.6)	(0.4)	20	30.9	19	27.9	2	32,400	13	11
5,686.9	2	14.2	3	6.3	9	12.3	19	3.51	285.7	12.0	7	24.7	22	21.9	8	34,054	11	12
N.A.		5.7	16	6.1	12	—		N.A.	—	—		—		—		30,817†	14	13
611.1	21	(1.7)	42	(3.4)	43	—	42	(0.51)	—	—		(18.2)	38	(10.2)	31	25,200	17	14
2,417.4	9	4.8	19	6.2	11	14.1	16	3.56	—	15.6	3	27.0	20	22.7	7	48,556†	7	15
2,406.8	10	8.8	8	4.2	22	7.6	29	4.44	2.3	—		26.4	21	—		32,623†	12	16
1,192.5	14	4.2	22	7.4	6	14.8	13	3.00	55.4	6.4	12	24.1	23	20.6	10	29,400	15	17
N.A.		9.1	7	4.7	19	11.8	23	N.A.	—	—		—		—		22,858	19	18
1,154.0	15	3.7	24	6.7	8	12.0	21	2.00	58.7	3.7	18	(0.4)	34	13.0	22	23,800†	18	19
616.0	20	3.8	23	4.8	17	12.8§	18	3.46	1.2	(9.0)	28	17.4	27	—		4,508	33	20
758.9	17	3.4	25	6.8	7	16.9	7	2.40	66.7	5.8	15	16.2	28	16.3	13	27,200	16	21
N.A.		6.6	15	8.8	5	57.4	2	2.36	52.3	(3.9)	25	79.5	1	(0.9)	29	6,900	28	22
N.A.		(4.0)	45	(6.9)	46	(48.9)	43	(2.21)	—	—		(2.4)	35	(8.9)	30	16,600	21	23
682.8	18	8.1	11	4.7	18	16.4	9	4.57‡	254.3	14.5	4	20.1	26	17.4	12	8,500	24	24
863.2	16	6.9	13	4.4	20	10.2	25	1.84	192.1	8.6	9	52.5	8	22.8	6	6,467	29	25
425.2	24	4.6	20	5.1	15	12.2	20	2.37	50.0	5.1	16	49.5	12	21.3	9	6,205	31	26
N.A.		(0.4)	40	(0.6)	40	(10.7)	40	N.A.	—	—		—		—		11,421	22	27
178.3	27	1.2	36	1.5	36	16.1	10	0.51**	—	—		73.3	3	—		7,066†	27	28
179.6	26	0.9	37	1.7	35	5.5	35	1.01	12.2	(6.4)	27	51.4	10	6.0	27	8,500	25	29
1,724.3	12	21.9	1	14.3	2	25.6	3	3.06	33.3	17.8	2	49.6	11	33.2	1	3,237	40	30
N.A.		0.9	38	3.3	26	15.5	11	N.A.	—	—		—		—		950	49	31
158.6	29	1.5	34	2.9	30	7.4	30	1.50	15.4	6.2	14	21.6	25	26.9	3	9,935	23	32
N.A.		(2.2)	43	(3.7)	44	(115.0)	45	(0.57)‡	—	—		—		—		2,268	44	33
83.5	33	1.2	35	2.2	33	6.5	33	1.27	19.8	(1.6)	23	77.2	2	12.4	23	8,488	26	34
175.6	28	2.7	28	1.7	34	5.8	34	1.64	—	(6.1)	26	38.3	16	6.8	26	4,707	32	35
N.A.		8.2	10	3.2	27	7.0	31	N.A.	—	—		—		—		3,712	38	36
71.4	34	1.6	33	4.4	21	24.6	4	1.64	(21.9)	10.0	8	55.6	6	15.5	16	3,691	39	37
N.A.		9.3	6	3.8	24	11.3	24	2,597.00	(11.9)	3.5	19	—		—		1,218	48	38
399.8	25	(6.2)	47	(3.2)	42	(10.8)	41	(3.08)	(269.2)	—		(14.9)	37	15.0	18	3,910	36	39
152.9	30	1.6	32	2.4	32	7.9	28	0.60**	(64.9)	—		11.4	30	—		3,969	35	40
472.1	23	8.4	9	11.0	3	22.0	6	1.40	27.3	—		41.5	14	—		6,466	30	41
9.4	37	(25.6)	50	(60.9)	50	—		(12.96)	—	—		(82.2)	39	—		300	50	42
N.A.		2.1	30	1.5	37	2.8	37	N.A.	—	—		—		—		3,835†	37	43
57.9	35	(2.5)	44	(5.2)	45	(193.9)	46	(4.48)	—	—		31.0	18	15.7	14	3,000	41	44
12.7	36	(7.4)	48	(20.8)	49	(82.2)	44	(3.89)	—	—		(9.1)	36	(12.5)	32	4,179†	34	45
666.1	19	15.1	2	3.5	25	6.7	32	1.29	30.9	(1.5)	22	64.0	4	14.0	20	1,950†	45	46
125.4	32	(4.1)	46	(11.7)	48	(36.4)	42	(0.99)	—	—		61.3	5	—		2,350	43	47
142.3	31	5.0	18	6.3	10	14.9	12	1.51	58.9	13.0	5	36.5	17	14.6	19	2,400	42	48
N.A.		0.3	39	0.6	39	2.3	38	0.67	(32.3)	(18.9)	29	—		—		1,926	46	49
N.A.		7.0	12	4.0	23	11.9	22	N.A.	—	—		—		—		1,640†	47	50
52,890.4																1,151,011		

tions and file public financial statements.

Name changed from Allegis May 26, 1988.

Figures are for fiscal year ended June 30, 1988.

Figures reflect acquisition of Missouri-Kansas-Texas Railroad (No. 48 on last year's Transportation list) August 1, 1988.

Figures are for fiscal year ended May 31, 1988.

Name changed from United Van Lines January 1, 1988.

Wholly owned by Whitman (No. 119 on the FORTUNE 500 Industrials list).

Name changed from Illinois Central Gulf Railroad January 25, 1988.

Figures are for fiscal year ended January 31, 1988.

THE SERVICE 500

THE 50 LARGEST

UTILITIES

RANK BY ASSETS		COMPANY	ASSETS[1]		OPERATING REVENUES[2]			PROFITS			STOCKHOLDERS' EQUITY	
1988	1987		$ Millions	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank	% change from 1987	$ Millions	Rank
1	1	**GTE** Stamford, Conn.	31,103.9	8.2	16,459.9	1	6.7	1,224.7	5	9.5	8,631.3	4
2	2	**BELLSOUTH** Atlanta	28,472.4	3.9	13,596.9	2	10.8	1,665.5	1	0.0	11,839.4	1
3	3	**NYNEX** New York	25,362.0	11.3	12,661.0	3	4.8	1,315.0	3	3.0	9,420.0	2
4	6	**BELL ATLANTIC** Philadelphia	24,729.2	16.4	10,880.1	4	5.6	1,316.8	2	6.2	9,176.7	3
5	9	**US WEST** Englewood, Colo.	22,415.9	17.4	9,220.6	7	9.2	1,131.7	7	12.6	7,785.6	9
6	7	**PACIFIC TELESIS GROUP** San Francisco	21,191.0	0.6	9,483.0	6	3.9	1,188.0	6	25.1	8,085.0	6
7	4	**PACIFIC GAS & ELECTRIC** San Francisco	21,067.7	(3.1)	7,645.7	9	6.4	62.1	45	(91.0)	7,920.1	7
8	5	**SOUTHWESTERN BELL** St. Louis	20,985.1	(2.4)	8,452.7	8	5.6	1,060.1	8	1.2	8,504.2	5
9	8	**SOUTHERN** Atlanta	19,729.0	2.9	7,235.0	10	3.2	846.0	9	52.6	6,686.0	11
10	10	**AMERICAN INFORMATION TECH.** Chicago	19,163.0	2.0	9,903.3	5	3.9	1,237.4	4	4.1	7,843.5	8
11	11	**COMMONWEALTH EDISON** Chicago	17,822.3	(1.9)	5,613.3	15	(1.1)	737.5	11	(32.1)	7,394.4	10
12	15	**TEXAS UTILITIES** Dallas	16,057.6	14.8	4,153.7	19	1.7	642.7	12	(5.5)	5,641.1	12
13	12	**MIDDLE SOUTH UTILITIES** New Orleans	15,941.8	5.2	3,565.4	22	3.2	411.0	21	15.3	5,231.9	13
14	33	**PINNACLE WEST CAPITAL** Phoenix	15,054.1	124.6	2,091.1	41	59.2	4.2	47	(98.5)	2,034.8	35
15	13	**SCECORP** Rosemead, Calif.[3]	14,866.3	4.6	6,252.7	11	13.8	761.8	10	(3.4)	5,064.8	14
16	14	**AMERICAN ELECTRIC POWER** Columbus, Ohio	14,262.5	1.8	4,840.8	17	1.1	626.8	13	24.8	4,226.0	16
17	17	**PHILADELPHIA ELECTRIC** Philadelphia	11,862.9	5.8	3,228.7	26	1.5	566.0	15	4.3	4,215.0	17
18	20	**FPL GROUP** North Palm Beach, Fla.	11,793.3	18.1	5,853.5	13	31.9	447.8	18	11.1	3,265.5	21
19	19	**PUBLIC SVCE. ENTERPRISE GROUP** Newark, N.J.	11,690.4	7.7	4,394.7	18	4.4	528.6	17	1.6	3,925.1	18
20	16	**CENTERIOR ENERGY** Independence, Ohio	11,573.1	2.6	2,037.6	43	4.7	(74.0)	48	(118.9)	2,771.8	25
21	40	**PACIFICORP** Portland, Oreg.	11,396.1	99.0	3,519.3	23	62.7	446.7	19	67.7	2,935.9	23
22	22	**DOMINION RESOURCES** Richmond	10,282.3	6.5	3,344.1	25	2.9	438.4	20	1.8	3,224.2	22
23	21	**HOUSTON INDUSTRIES** Houston	10,219.0	5.1	3,649.5	20	0.6	395.3	22	(9.1)	3,407.4	20
24	18	**DETROIT EDISON** Detroit	10,060.3	(9.8)	3,102.2	28	8.6	(378.8)	49	(168.3)	2,515.7	29
25	23	**CONSOLIDATED EDISON OF NEW YORK** New York	9,551.7	1.8	5,108.8	16	0.3	599.3	14	8.9	4,799.4	15
26	26	**DUKE POWER** Charlotte, N.C.	8,890.6	4.5	3,627.0	21	(2.1)	550.4	16	10.0	3,872.1	19
27	28	**ENRON** Houston	8,694.8	12.7	5,707.6	14	(6.2)	109.0‡	43	1,829	1,637.0	41
28	•	**TELE-COMMUNICATIONS** Denver	8,574.0	36.2	2,282.0	35	33.5	56.0	46	900.0	1,205.5	50
29	25	**LONG ISLAND LIGHTING** Hicksville, N.Y.	8,326.3	(10.7)	2,137.8	40	3.2	(1,046.6)	50	(487.8)	2,684.3	26
30	24	**CMS ENERGY** Dearborn, Mich.	8,304.9	(11.2)	2,942.7	30	5.1	271.6	29	47.8	1,984.5	37
31	30	**CENTRAL & SOUTH WEST** Dallas	8,110.0	6.4	2,512.0	33	3.1	356.0	23	(4.3)	2,594.0	27
32	27	**OHIO EDISON** Akron	7,555.5	(4.4)	2,142.6	39	20.4	218.9	32	(47.0)	2,843.3	24
33	31	**PENNSYLVANIA POWER & LIGHT** Allentown	7,524.6	4.6	2,213.9	37	6.0	332.0	24	9.8	2,049.8	34
34	29	**CAROLINA POWER & LIGHT** Raleigh, N.C.	7,504.2	(1.9)	2,273.4	36	9.2	196.8	36	(42.7)	2,542.6	28
35	32	**NIAGARA MOHAWK POWER** Syracuse, N.Y.	7,076.0	4.1	2,800.5	32	6.7	208.8	34	–	1,881.4	39
36	45	**PACIFIC ENTERPRISES** Los Angeles	6,866.0	36.6	5,932.0	12	11.1	222.0	31	(11.6)	1,924.0	38
37	34	**GULF STATES UTILITIES** Beaumont, Tex.	6,858.1	2.7	1,520.5	48	6.1	103.1	44	(57.2)	2,324.5	30
38	35	**NORTHEAST UTILITIES** West Springfield, Mass.	6,764.6	1.5	2,079.2	42	(0.1)	233.9	30	2.1	1,837.0	40
39	37	**GENERAL PUBLIC UTILITIES** Parsippany, N.J.	6,415.4	2.2	2,834.0	31	6.0	283.8	27	9.5	2,024.0	36
40	39	**ILLINOIS POWER** Decatur	6,053.1	2.2	1,284.7	50	5.3	189.4	38	(34.6)	2,210.8	31
41	41	**CONTEL** Atlanta	5,865.5	6.4	2,963.7	29	2.0	276.1	28	542.1	1,573.0	43
42	38	**UNION ELECTRIC** St. Louis	5,827.2	(2.2)	2,029.1	44	4.2	291.6	26	(12.7)	2,175.1	32
43	42	**COLUMBIA GAS SYSTEM** Wilmington, Del.	5,641.0	3.9	3,128.9	27	11.8	119.0	42	6.9	1,552.6	44
44	44	**TEXAS EASTERN** Houston	5,444.2	7.3	3,519.1	24	(2.6)	151.9	41	58.1	1,376.8	47
45	46	**BALTIMORE GAS & ELECTRIC** Baltimore	5,126.4	13.7	1,863.7	47	3.0	303.4	25	1.1	2,174.0	33
46	47	**NEW YORK STATE ELECTRIC & GAS** Binghamton	4,693.3	4.6	1,340.2	49	3.9	171.5	40	–	1,334.5	48
47	48	**NORTHERN STATES POWER** Minneapolis	4,495.5	2.1	2,006.5	45	13.3	214.8	33	4.8	1,446.0	46
48	49	**ALLEGHENY POWER SYSTEM** New York	4,334.4	0.7	2,170.5	38	9.6	205.1	35	(0.9)	1,524.9	45
49	•	**FLORIDA PROGRESS** St. Petersburg	4,303.5	4.2	2,002.0	46	2.3	179.8	39	(4.3)	1,316.9	49
50	•	**CONSOLIDATED NATURAL GAS** Pittsburgh	4,109.4	4.1	2,467.8	34	6.3	192.9	37	3.7	1,634.8	42
		TOTALS	590,011.5		232,074.8			21,591.7			196,268.3	

• Not on last year's list.

† Average for the year; see the reference to "employees" on page 388.

‡ Reflects an extraordinary charge of at least 10%, see the explanations of "profits" and "earnings per share" on page 388.

§ Dividends paid on mandatory redeemable preferred stock subtracted from profits.

N.A. Not available.

[1] Assets are shown as of December 31, 1988, unless otherwise not

MARKET VALUE $ Millions	Rank	NET PROFITS AS PERCENT OF REVENUES %	Rank	ASSETS %	Rank	STOCKHOLDERS' EQUITY %	Rank	EARNINGS PER SHARE 1988/$	% change from 1987	1978-88 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1988 %	Rank	1978-88 annual average %	Rank	EMPLOYEES Number	Rank	
15,382.4	4	7.4	39	3.9	28	14.1§	11	3.58	8.8	2.3	23	34.4	9	17.9	18	159,000	1	1
20,244.2	1	12.2	18	5.8	5	14.1	12	3.51	1.4	–		15.9	27	–		100,280	2	2
14,454.9	6	10.4	28	5.2	8	14.0	14	6.63	5.9	–		9.0	40	–		97,400	3	3
15,638.0	2	12.1	20	5.3	7	14.3	10	6.65	6.6	–		15.7	29	–		81,000	4	4
11,597.8	8	12.3	17	5.0	11	14.5	7	6.17	16.2	–		20.3	15	–		69,765	6	5
15,604.4	3	12.5	15	5.6	6	14.7	6	2.81	27.1	–		22.9	12	–		69,696	7	6
7,457.4	10	0.8	46	0.3	46	0.6§	46	(0.10)	(106.5)	–		19.9	16	16.2	22	26,900†	12	7
14,231.4	7	12.5	14	5.1	10	12.5	29	3.53	1.4	–		25.2	11	–		64,930	8	8
7,694.0	9	11.7	23	4.3	23	12.7	27	2.72	41.7	6.5	8	10.0	38	17.5	19	32,523	10	9
14,806.0	5	12.5	16	6.5	1	15.8	2	4.55	7.4	–		19.9	17	–		77,334	5	10
7,111.5	11	13.1	9	4.1	26	9.0§	37	3.01	(36.4)	(0.9)	31	33.1	10	14.7	28	18,023	18	11
4,955.3	17	15.5	3	4.0	27	11.4	34	4.00	(12.1)	4.6	14	15.7	28	14.1	32	15,669	21	12
3,605.7	24	11.5	24	2.6	41	7.9	39	2.01	15.5	(2.0)	32	96.4	1	9.6	39	13,136	24	13
1,203.3	48	0.2	47	0.0	47	(0.9)	47	0.05	(98.5)	(33.9)	39	(35.6)	50	9.0	40	11,200	28	14
7,072.7	12	12.2	19	5.1	9	15.0	3	3.49	2.9	7.1	6	14.3	33	20.3	6	16,995	19	15
5,152.9	15	12.9	11	4.4	21	14.8	5	3.24	24.6	3.7	18	12.8	34	14.6	31	22,886	14	16
4,286.7	21	17.5	1	4.8	14	12.5§	28	2.33	0.0	2.2	24	21.2	13	16.6	21	11,329	27	17
4,015.6	23	7.6	37	3.8	31	13.7	16	3.42	10.3	4.2	16	16.7	26	18.9	11	19,000	17	18
5,031.1	16	12.0	21	4.5	18	13.5	21	2.57	0.8	2.7	20	11.4	36	17.9	17	12,833	25	19
2,235.5	36	(3.6)	48	(0.6)	48	(2.7)	48	(0.53)	(118.8)	–		(5.2)	47	11.8	34	9,103	34	20
4,452.7	19	12.7	13	3.9	29	14.5§	8	3.46	(3.9)	3.3	19	17.4	23	16.0	23	16,418	20	21
4,097.0	22	13.1	10	4.3	24	13.6	20	4.52	(0.4)	4.8	13	9.4	39	18.3	13	14,043	22	22
3,466.5	25	10.8	26	3.9	30	11.6	32	3.34	(10.7)	1.8	25	3.0	44	15.2	27	11,599	26	23
2,733.9	31	(12.2)	49	(3.8)	49	(15.7)	49	(2.92)	(189.8)	–		45.7	6	15.3	26	10,614	31	24
5,343.8	14	11.7	22	6.3	2	12.4§	30	4.93	11.5	8.7	2	19.6	18	25.0	2	20,108	15	25
4,607.9	18	15.2	4	6.2	3	13.7§	18	4.91	11.6	6.5	7	14.9	31	19.0	10	19,600	16	26
2,024.7	41	1.9	45	1.3	44	6.0§	43	1.54‡	–	(6.7)	37	0.0	45	14.6	30	6,263	44	27
6,045.7	13	2.5	44	0.7	45	4.6	44	0.31	675.0	20.6	1	10.6	36	46.7	1	28,300	11	28
1,751.3	43	(49.0)	50	(12.6)	50	(39.0)	50	(10.08)	(682.7)	–		78.9	3	3.7	43	6,200	45	29
2,180.5	37	9.2	33	3.3	34	13.7	17	3.31	54.0	0.3	29	80.6	2	8.8	41	10,072	32	30
3,019.5	28	14.2	8	4.4	22	13.7	15	3.43	(12.5)	4.3	15	17.1	24	18.0	16	8,478	38	31
3,126.4	27	10.2	29	2.9	38	7.2§	41	1.22	(49.2)	0.2	30	4.0	43	15.8	24	7,180	43	32
2,662.0	32	15.0	5	4.4	20	14.4§	9	3.73	12.3	2.7	21	18.4	20	18.1	14	8,306	39	33
2,863.1	30	8.7	35	2.6	40	6.4§	42	2.04	(46.7)	(4.1)	33	20.8	14	16.9	20	9,027	36	34
1,627.6	46	7.5	38	3.0	37	9.4§	36	1.21	–	(4.4)	34	18.1	21	11.2	36	10,950	29	35
2,611.2	33	3.7	43	3.2	35	11.5	33	3.51	(15.2)	1.2	27	(18.5)	49	15.7	25	40,538	9	36
1,040.0	50	6.8	40	1.5	43	4.4	45	0.37	(77.6)	(14.3)	38	65.8	4	5.4	42	4,844	48	37
2,132.6	39	11.3	25	3.5	33	12.7	25	2.15	1.9	5.0	12	7.1	42	20.3	5	9,050	35	38
2,155.2	38	10.0	30	4.4	19	14.0	13	4.75	15.3	7.5	4	39.3	7	9.9	38	13,473	23	39
1,050.1	49	14.7	6	3.1	36	7.9§	38	1.66	(55.7)	(4.9)	36	(3.7)	46	10.9	37	4,663	49	40
4,293.0	20	9.3	32	4.7	16	17.5§	1	3.50	536.4	5.6	10	47.6	5	19.8	9	23,000	13	41
2,438.2	34	14.4	7	5.0	12	13.1§	24	2.56	(12.0)	2.4	22	17.0	25	18.1	15	7,245	42	42
1,692.0	45	3.8	42	2.1	42	7.7§	40	2.46	7.0	(4.6)	35	(8.0)	48	12.0	33	10,785†	30	43
2,876.7	29	4.3	41	2.8	39	11.0	35	2.85	58.3	0.4	28	35.1	8	11.3	35	9,300	33	44
2,418.6	35	16.3	2	5.9	4	13.2§	23	3.47	0.0	7.5	5	12.4	35	19.9	8	8,806	37	45
1,311.4	47	12.8	12	3.7	32	12.7§	26	2.81	–	1.3	26	19.0	19	14.7	29	4,494	50	46
2,024.8	40	10.7	27	4.8	13	14.9	4	3.11	3.3	6.3	9	18.1	22	20.3	7	7,504	40	47
1,889.9	42	9.4	31	4.7	15	13.4	22	3.96	(2.2)	7.6	3	9.0	41	20.4	4	5,851	46	48
1,748.5	44	9.0	34	4.2	25	13.7	19	3.52	(5.9)	4.0	17	14.7	32	18.9	12	5,512	47	49
3,430.8	26	7.8	36	4.7	17	11.8	31	2.34	4.5	5.0	11	15.6	30	22.8	3	7,501	41	50
264,896.5																1,278,726		

ed. Only assets of consolidated subsidiaries are included.
Gross receipts from operations during the 1988 fiscal year, including any nonutility revenues from manufacturing, transportation, etc., and revenues from discontinued operations when they are published. All companies on the list must have derived more than 50% of their revenues from utility operations.

[1] Name changed from Southern California Edison July 1, 1988.

DEFINITIONS AND EXPLANATIONS

ASSETS

Assets are those shown at the company's fiscal year-end.

PROFITS

Profits are shown after taxes and after extraordinary credits or charges if any are shown on the income statement. A double asterisk (**) signifies an extraordinary credit reflecting at least 10% of the profits shown, a double dagger (‡) an extraordinary charge of at least 10%. Figures in parentheses indicate a loss. Profit declines over 100% reflect swings from 1987 profits to 1988 losses. Cooperatives provide only "net margin" figures, which are not comparable with the profits figures in these listings, and therefore N.A. is shown in that column.

STOCKHOLDERS' EQUITY

Stockholders' equity is the sum of capital stock, surplus, and retained earnings at the company's year-end. Redeemable preferred stock is excluded if its redemption is either mandatory or outside the control of the company, except in the case of cooperatives. For purposes of calculating "profits as percent of stockholders' equity," any dividends paid on redeemable preferred stock, if that stock's redemption is either mandatory or outside the control of the company, have been subtracted from profits.

EMPLOYEES

The figure shown is a year-end total except when it is followed by a dagger (†), in which case it is an average.

MARKET VALUE

The figure shown was arrived at by multiplying the number of common shares outstanding (at the latest date available) by the price per common share as of April 21, 1989.

EARNINGS PER SHARE

For all companies the figures shown are the primary earnings per share that appear on the company's income statement. Per share earnings for 1987 and 1978 are adjusted for stock splits and stock dividends. They are not restated for mergers, acquisitions, or accounting changes made after 1978. A double asterisk (**) signifies an extraordinary credit reflecting at least 10% of the profit shown, a double dagger (‡) an extraordinary charge of at least 10%. Results are listed as not available (N.A.) if the companies are cooperatives, joint ventures, or wholly owned subsidiaries of other companies, or if the figures were not published in 1978. The growth rate is the average annual growth, compounded. No growth rate is given if the company had a loss in either 1978 or 1988.

TOTAL RETURN TO INVESTORS

Total return to investors includes both price appreciation and dividend yield to an investor in the company's stock. The figures shown assume sales at the end of 1988 of stock owned at the end of 1978 and 1987. It has been assumed that any proceeds from cash dividends, the sale of rights and warrant offerings, and stock received in spinoffs were reinvested when they were paid. Returns are adjusted for stock splits, stock dividends, recapitalizations, and corporate reorganizations as they occur; however, no effort has been made to reflect the cost of brokerage commissions or of taxes. Results are listed as not available (N.A.) if shares are not publicly traded or are traded on only a limited basis. If companies have more than one class of shares outstanding, only the more widely held and actively traded has been considered. Total return percentages shown are the returns received by the hypothetical investor described above. The ten-year figures are annual averages, compounded.

Most of the figures in the FORTUNE Service 500 Directory were prepared by reporters Karen Nickel and Alan Deutschman. The figures on market value, per share earnings, and total return to investors were prepared by Claudine Knight and Kathleen Smyth.

INDUSTRY MEDIANS

CHANGES IN SALES[1]

	INCREASES
DIVERSIFIED SERVICE	14.4%
RETAILING	13.9
DIVERSIFIED FINANCIAL	9.8
TRANSPORTATION	9.7
UTILITIES	5.1

CHANGES IN PROFITS[2]

	INCREASES
COMMERCIAL BANKS	32.5%
DIVERSIFIED SERVICE	22.0
RETAILING	20.3
TRANSPORTATION	20.0
UTILITIES	3.0
	DECREASES
SAVINGS INSTITUTIONS	18.6%
DIVERSIFIED FINANCIAL	4.7

TOTAL RETURN TO INVESTORS, 1988[2]

RETAILING	28.9%
TRANSPORTATION	27.0
DIVERSIFIED SERVICE	21.2
COMMERCIAL BANKS	19.3
UTILITIES	16.8
DIVERSIFIED FINANCIAL	14.8
SAVINGS INSTITUTIONS	(2.6)
THE SERVICE 500 MEDIAN	18.3

TOTAL RETURN TO INVESTORS 1978-88 ANNUAL AVERAGE[2]

RETAILING	24.7%
COMMERCIAL BANKS	20.2
DIVERSIFIED SERVICE	19.6
DIVERSIFED FINANCIAL	17.8
UTILITIES	16.2
TRANSPORTATION	15.5
SAVINGS INSTITUTIONS	10.0
THE SERVICE 500 MEDIAN	18.4

RETURN ON SALES[1]

	1988	1987
UTILITIES	11.0%	12.0%
DIVERSIFIED FINANCIAL	5.9	6.9
TRANSPORTATION	3.4	3.0
RETAILING	2.5	2.4
DIVERSIFIED SERVICE	2.2	3.1
THE SERVICE 500 MEDIAN	3.8	2.9

RETURN ON ASSETS[2]

RETAILING	5.4%
UTILITIES	4.2
DIVERSIFIED SERVICE	4.0
TRANSPORTATION	3.4
DIVERSIFIED FINANCIAL	1.2
COMMERCIAL BANKS	0.9
SAVINGS INSTITUTIONS	0.4
THE SERVICE 500 MEDIAN	1.1

RETURN ON STOCKHOLDERS' EQUITY[2]

	1988	1987
RETAILING	16.3%	15.5%
COMMERCIAL BANKS	14.6	11.1
DIVERSIFIED FINANCIAL	12.8	16.3
UTILITIES	12.7	12.8
DIVERSIFIED SERVICE	12.4	12.2
TRANSPORTATION	11.6	9.7
SAVINGS INSTITUTIONS	8.8	12.2
THE SERVICE 500 MEDIAN	13.0	11.5

SALES PER DOLLAR OF STOCKHOLDERS' EQUITY[1]

DIVERSIFIED SERVICE	$5.91
RETAILING	4.06
TRANSPORTATION	3.06
DIVERSIFED FINANCIAL	2.40
UTILITIES	1.14
THE SERVICE 500 MEDIAN	3.01

SALES PER EMPLOYEE[1]

DIVERSIFIED FINANCIAL	$314,095
UTILITIES	265,816
DIVERSIFIED SERVICE	239,439
TRANSPORTATION	126,053
RETAILING	102,756
THE SERVICE 500 MEDIAN	172,127

[1] Commercial banks, savings institutions, and life insurance companies are not included. [2] Life insurance companies are not included.

THE MONEY LOSERS†

	RANK	LOSS
AMERICAN TEL. & TEL.	S-1	$1,669.0
LONG ISLAND LIGHTING	U-29	1,046.6
MCORP	B-38	940.0*
TEXAS AIR	T-5	718.6*
DETROIT EDISON	U-24	378.8
FIRST BANK SYSTEM	B-29	310.0
MAXICARE HEALTH PLANS	S-49	267.8*
SOUTHLAND	R-13	216.2*
MERITOR FINANCIAL GROUP	I-5	209.8*
WESTERN S&L ASS'N	I-33	201.7
R.H. MACY	R-17	188.2*
ENSERCH	S-31	166.4
MORRISON KNUDSEN	S-37	127.1*
SOUTHMARK	F-29	125.1
VIACOM INTERNATIONAL	S-68	123.1*
GOLDOME	I-11	119.1
GIBRALTAR FINANCIAL CORP.	I-10	100.5*
AMERICAN CARRIERS	T-42	99.4*
REVCO D.S.	R-40	88.5*
LORIMAR TELEPICTURES	S-99	86.8*
CENTERIOR ENERGY	U-20	74.0
PAN AM	T-14	72.7*
FLORIDA FEDERAL S&L ASS'N	I-38	68.9*
MELLON BANK CORP.	B-16	65.0*
COLUMBIA PICT. ENTERTAIN.	S-82	62.3
SUBARU OF AMERICA	S-48	57.9*
EMPIRE OF AMER. FED. SAV.	I-18	57.3
LOMAS & NETTLETON FNL.	F-35	56.4
HARCOURT BRACE JOVAN.	S-47	53.5
EMERY AIR FREIGHT	T-23	50.3*
SANTA FE SOUTH. PACIFIC	T-10	46.5
CHARTER MEDICAL	S-64	38.9
KANSAS CITY SOUTHERN	T-39	31.5
APL	S-72	31.5
M.D.C. HOLDINGS	S-97	31.4
BEVERLY ENTERPRISES	S-42	23.9*
VONS COS.	R-27	23.9
TRANSCON	T-45	23.7*
CITYFED FINANCIAL	I-19	23.6
NATIONAL INTERGROUP	S-24	21.9*
SSC HOLDINGS	R-22	21.5
TESORO PETROLEUM	S-80	19.4*
HOMESTEAD FINAN. CORP.	I-32	15.6
PERMIAN PARTNERS	S-36	14.7
MAYFLOWER GROUP	T-33	13.6
BRANIFF	T-47	12.2*
HAL	T-44	8.8*
DCNY	F-45	8.5
FINAN. CORP. OF S. BARBARA	I-39	7.1
TONKA	S-96	5.8*
BEST PRODUCTS	R-45	4.4
BALFOUR MACLAINE	S-87	4.0
ARKANSAS BEST	T-27	3.3

†Life insurance companies are not included. *Also lost money in 1987.

ARRIVALS AND DEPARTURES

NEWCOMERS TO THE 500	RANK
AMERICAN FAMILY LIFE	L-41
APL	S-72
BANCAL TRI-STATE CORP.	B-72
BANK SOUTH CORP.	B-97
BENJ. FRANKLIN FED. S&L ASS'N	I-34
BRUNO'S	R-49
CENTRAL FIDELITY BANKS	B-100
CINCINNATI FINANCIAL	F-47
CITIZENS SAVINGS FINANCIAL CORP.	I-44
COLUMBIA PICTURES ENTERTAINMENT	S-82
COSTCO WHOLESALE	R-47
ECOLAB	S-71
FIFTH THIRD BANCORP	B-90
FIRST ALABAMA BANCSHARES	B-93
FIRST EMPIRE STATE CORP.	F-36
FIRST NAT'L CINCINNATI CORP.	B-86
FIRST VIRGINIA BANKS	B-98
FLORIDA PROGRESS	U-49
FRANKLIN SAVINGS ASS'N	I-12
FUJI BANK & TRUST CO.	B-96
GENERAL CINEMA	R-43
HARCOURT BRACE JOVANOVICH	S-47
HARPER GROUP	T-48
HARTFORD LIFE	L-30
HOME DEPOT	R-48
HOME OWNERS FED. S&L ASS'N	I-50
INDUSTRIAL BANK OF JAPAN TRUST CO.	B-99
ITT	F-8
JACKSON NATIONAL LIFE	L-35
MERCHANTS NATIONAL CORP.	B-92
MIDLAND ENTERPRISES	T-50
NVR L.P.	S-63
PEOPLE'S BANK	I-30
PERMIAN PARTNERS	S-36
PROGRESSIVE CORP.	F-46
SANWA BANK CALIFORNIA	B-77
SCHWAB (CHARLES)	F-43
SFFED CORP.	I-46
STANDARD FEDERAL BANK	I-21
STATESMAN GROUP	F-44
SUN LIFE OF AMERICA	L-50
TALMAN HOME FED. S&L ASS'N OF ILL.	I-29
TELE-COMMUNICATIONS	U-28
TONKA	S-96
TRAILER TRAIN	T-38
WHEELABRATOR GROUP	S-70

RETURNED TO THE 500**	
ACE HARDWARE (1986: S-65)	S-60
ALLEGHANY (1986: F-47)	F-50
AMERICAN GENERAL (1984: F-11)	F-12
AMER. S&L ASS'N. OF FLA. (1986: I-50)	I-35
AMERICAN TEL. & TEL. (1983: U-1)	S-1
ARROW ELECTRONICS (1984: S-80)	S-88
CONSOLIDATED NATURAL GAS (1983: U-48)	U-50
FOSTER WHEELER (1985: S-52)	S-86
HARDWARE WHOLESALERS (1986: S-90)	S-92
HARVEST STATES COOPS (1984: S-12)	S-35
MARSH & MCLENNAN COS. (1986: F-48)	F-49
MEYER (FRED) (1979: R-48)	R-46
SOUTHERN PACIFIC TRANS. (1982: T-3)	T-18
UNION EQUITY CO-OP. EXCH. (1984: S-96)	S-59
UNIVAR (1986: S-70)	S-81
VONS COS. (1977: R- 29)	R-27

DISPLACED FROM THE 500	1987 RANK
ALLEGHENY BEVERAGE	S-67
ALLIED VAN LINES [1]	T-36
AMERICAN CONTINENTAL CORP. [3]	I-34
AMERICAN GENERAL LIFE	L-50
AMFAC	S-33
BARCLAYSAMERICANCORP.	F-37
BERKSHIRE HATHAWAY [4]	S-34
BROWN GROUP	R-49
CAESARS WORLD	S-90
CARTERET SAV. & LOAN ASS'N [2]	I-26
CAVENHAM (USA) [1]	R-34
CENTERRE BANCORP. [2]	B-87
CENTRAL BANCSHARES OF THE SOUTH	B-97
COUNTRYMARK	S-100
EMERSON RADIO	S-87
EQUIMARK CORP.	B-100
FARM & HOME FINANCIAL CORP.	I-46
FARMERS GROUP [2]	F-39
FARM HOUSE FOODS	S-92
FINANCIAL CORP. OF AMERICA [1]	I-1
FIRST BOSTON [1]	F-8
FIRST COMMERCE CORP.	B-98
FIRST KENTUCKY NATIONAL CORP.	B-89
FISCHBACH [2]	S-65
GELCO [1]	S-98
GREAT LAKES BANCORP	I-50
HENLEY GROUP [4]	S-14
HILLS DEPARTMENT STORES	R-50
IRVING BANK CORP. [2]	B-25
IU INTERNATIONAL	S-47
KAUFMAN & BROAD	F-36
LEASEWAY TRANSPORTATION [1]	T-21
LUCKY STORES [2]	R-15
MARINE CORP. [2]	B-96
MISSOURI-KANSAS-TEXAS RAILROAD [2]	T-48
NATIONAL LIFE	L-48
PAYLESS CASHWAYS	R-48
PERINI	S-95
PREMIER BANCORP	B-95
PRIMERICA	F-18
PROVIDENT LIFE & ACCIDENT	L-47
PS GROUP	S-99
RAINIER BANCORP.	B-56
RAMADA INNS	S-94
SECURITY CAPITAL	F-46
SOCIETY FOR SAVINGS	I-45
SUN CARRIERS [1]	T-34
SUNKIST GROWERS	S-85
TELEX [4]	S-83
TEXAS AMERICAN BANCSHARES	B-88
TRANSCO ENERGY	U-50
UNION BANCORP [2]	B-42
UNITED FINANCIAL GROUP	I-22
UNITED MISSOURI BANCSHARES	B-99
U.S. HOME [2]	S-89
UNITED STATES LEASING INT'L	F-49
VALLEY FEDERAL S&L ASS'N	I-47
WARNER COMMUNICATIONS [4]	S-15
WESTERN CAPITAL INVESTMENT	I-44
WESTERN & SOUTHERN LIFE	L-45
WICKES COS. [4]	R-22
ZAYRE	R-17

**Figures in parentheses indicate year and rank the last time the company was listed. [1] Figures are no longer made public. [2] Acquired by another company on the Service 500. [3] Independent financial data not available. [4] Reclassified as an Industrial.

THE SERVICE 500

INDEX

COMPANY RANK

A
ACE HARDWARE S-60
AETNA LIFE L-4
AETNA LIFE & ANNUITY L-24
AETNA LIFE & CASUALTY F-4
AHMANSON (H.F.) I-1
AIR EXPRESS INTERNATIONAL T-37
AIRBORNE FREIGHT T-29
ALASKA AIR GROUP T-26
ALBERTSON'S R-16
ALCO HEALTH SERVICES S-40
ALCO STANDARD S-18
ALEXANDER & ALEX. SERV. F-42
ALEXANDER & BALDWIN T-30
ALLEGHANY F-50
ALLEGHENY POWER SYSTEM U-48
ALLIED STORES R-33
ALLSTATE LIFE L-21
AMERICA WEST AIRLINES T-28
AMERICAN CAPITAL CORP. I-27
AMERICAN CARRIERS T-42
AMERICAN ELECTRIC POWER U-16
AMERICAN EXPRESS F-1
AMERICAN FINANCIAL S-5
AMERICAN GENERAL F-12
AMERICAN GENERAL LIFE L-49
AMERICAN INFO. TECH. U-10
AMERICAN INT'L GROUP F-10
AMERICAN MEDICAL INT'L S-27
AMERICAN PRESIDENT COS. T-20
AMERICAN SAVINGS BANK I-45
AMER. S&L ASS'N OF FLA. I-35
AMERICAN STORES R-5
AMERICAN TEL. & TEL. S-1
AMERIFIRST BANK I-43
AMERITRUST CORP. B-53
AMES DEPARTMENT STORES R-31
AMR T-3
AMSOUTH BANCORP. B-65
ANCHOR SAVINGS BANK I-22
AON CORP. F-31
APL S-72
ARA GROUP S-17
ARGONAUT GROUP F-48
ARKANSAS BEST T-27
ARROW ELECTRONICS S-83
ASSOC. MILK PRODUCERS S-32
ATKINSON (GUY F.) S-95
ATLANTIC FINANCIAL FED. I-23
AUTOMATIC DATA PROC. S-55
AVNET S-45

B
BALFOUR MACLAINE S-87
BALLY MANUFACTURING S-44
BALTIMORE GAS & ELECTRIC U-45
BANC ONE CORP. B-27
BANCAL TRI-STATE CORP. B-72
BANCO POP. DE PUERTO RICO B-85
BANCORP HAWAII B-75
BANKAMERICA CORP. B-3
BANKERS TRUST N.Y. CORP. B-9
BANK OF BOSTON CORP. B-14
BANK OF NEW ENG. CORP. B-15
BANK OF NEW YORK CO. B-10
BANK OF TOKYO TRUST B-71
BANK SOUTH CORP. B-97
BARNETT BANKS B-25
BAYBANKS B-61
BEAR STEARNS COS. F-11
BELL ATLANTIC U-4
BELLSOUTH U-2
BENEFICIAL F-34
BENJ. FRANKLIN FED. S&L I-34
BERGEN BRUNSWIG S-20
BEST PRODUCTS R-45
BEVERLY ENTERPRISES S-42
BINDLEY WESTERN INDUST. S-65
BLOUNT S-69
B[illegible]MEN'S BANCSHARES B-43
BRANIFF T-47
BROWNING-FERRIS INDUST. S-39
BRUNO'S R-49
BURLINGTON NORTHERN T-11

C
CALFED I-3
CAPITAL CITIES/ABC S-11
CAPITAL HOLDING F-22
CAROLINA FREIGHT T-32
CAROLINA POWER & LIGHT U-34
CARTER HAWLEY HALE STRS. R-35
CASTLE & COOKE S-34
CBI INDUSTRIES S-61
CBS S-33
CENTERIOR ENERGY U-20
CENTEX S-58
CENTRAL FIDELITY BANKS B-100
CENTRAL & SOUTH WEST U-31
CENTRUST SAVINGS BANK I-20
CHARTER S-94
CHARTER MEDICAL S-64
CHASE MANHATTAN CORP. B-2
CHEMICAL BANKING CORP. B-6
CHEMICAL LEAMAN T-49
CHUBB F-27
CIGNA F-6
CINCINNATI FINANCIAL F-47
CIRCLE K R-36
CITADEL HOLDING CORP. I-42
CITICORP B-1
CITIZENS SAV. FINAN. CORP. I-44
CITIZENS & SOUTHERN CORP. B-35
CITYFED FINANCIAL CORP. I-19
CMS ENERGY U-30
CNW T-24
COAST SAVINGS & LOAN I-14
COLUMBIA GAS SYSTEM U-43
COLUMBIA PICTURES ENT. S-82
COLUMBIA S&L ASS'N I-13
COMDISCO S-62
COMERICA B-50
COMMERCE BANCSHARES B-88
COMMERCIAL FEDERAL CORP. I-25
COMMERCIAL METALS S-79
COMMONWEALTH EDISON U-11
COMPUTER SCIENCES S-76
CONNECTICUT GENERAL LIFE L-7
CONNECTICUT MUTUAL LIFE L-16
CONSOL. EDISON OF N.Y. U-25
CONSOL. FREIGHTWAYS T-17
CONSOL. NATURAL GAS U-50
CONSOLIDATED RAIL T-16
CONTEL U-41
CONTINENTAL F-21
CONTINENTAL ASSURANCE L-28
CONTINENTAL BANK CORP. B-17
CORESTATES FINAN. CORP. B-40
COSTCO WHOLESALE R-47
CRESTAR FINANCIAL CORP. B-55
CROSSLAND SAVINGS I-9
CSX T-4
CULBRO S-93

DAIRYMEN S-90
DAYTON HUDSON R-8
DCNY F-45
DELTA AIR LINES T-6
DETROIT EDISON U-24
DI GIORGIO S-77
DILLARD DEPT. STORES R-37
DIME SAVINGS BANK OF N.Y. I-16
DISNEY (WALT) S-21
DOMINION BANKSHARES B-63
DOMINION RESOURCES U-22
DOWNEY S&L ASS'N I-48
DUKE POWER U-26
DUN & BRADSTREET S-14

E
ECOLAB S-71
ELECTRONIC DATA SYSTEMS S-12
EMERY AIR FREIGHT T-23
EMPIRE OF AMERICA I-18
ENRON U-27
ENSERCH S-31
EQUITABLE BANCORP. B-91
EQUITABLE LIFE ASSURANCE L-3
EQUITABLE VARIABLE LIFE L-26
EUROPEAN AMER. BANK B-89
EXECUTIVE LIFE L-15

F
FARWEST FINANCIAL I-40
FEDERAL EXPRESS T-15
FED. NAT'L MORTGAGE ASS'N F-2
FEDERATED DEPT. STORES R-23
FIFTH THIRD BANCORP B-90
FINAN. CORP. OF S. BARBARA I-39
FIREMAN'S FUND F-25
1ST ALABAMA BANCSHARES B-93
1ST AMERICAN BANKSHARES B-54
FIRST AMERICAN CORP. B-69
FIRST BANK SYSTEM B-29
FIRST CHICAGO CORP. B-12
1ST CITY BANCORP. OF TEXAS B-46
FIRST EMPIRE STATE F-36
FIRST FEDERAL OF MICHIGAN I-17
FIRST FIDELITY BANCORP. B-19
FIRST FLORIDA BANKS B-95
FIRST INTERSTATE BANCORP B-8
FIRST MARYLAND BANCORP B-79
1ST NAT'L CINCINNATI CORP. B-86
1ST OF AMERICA BANK CORP. B-58
FIRST PENNSYLVANIA CORP. B-78
FIRST SECURITY CORP. B-94
1ST TENNESSEE NAT'L CORP. B-80
FIRST UNION CORP. B-22
FIRST VIRGINIA BANKS B-98
FIRST WACHOVIA CORP. B-32
FIRSTAR CORP. B-67
FLEET/NORSTAR FINANCIAL B-21
FLEMING COS. S-2
FLORIDA FEDERAL S&L ASS'N I-38
FLA. NAT'L BANKS OF FLA. B-68
FLORIDA PROGRESS U-49
FLUOR S-8
FOOD LION R-28
FOSTER WHEELER S-86
FPL GROUP U-18
FRANKLIN LIFE L-47
FRANKLIN SAVINGS ASS'N I-12
FUJI BANK & TRUST CO. B-96

G
GEICO F-37
GENERAL AMERICAN LIFE L-40
GENERAL CINEMA R-43
GENERAL PUBLIC UTILITIES U-39
GENERAL RE F-28
GENUINE PARTS S-30
GIANT FOOD R-34
GIBRALTAR FINANCIAL CORP. I-10
GLENFED I-4
GOLDEN WEST FINAN. CORP. I-7
GOLDOME I-11
GRAINGER (W.W.) S-56
GRAND TRUNK T-43
GREAT AMER. FIRST SAV. BANK I-8
GREAT ATL. & PACIFIC TEA R-10
GREAT WESTERN FINANCIAL I-2
GREYHOUND S-23
GTE U-1
GUARDIAN OF AMERICA L-43
GULF STATES UTILITIES U-37
GULF & WESTERN S-28

H
HAL T-44
HALLIBURTON S-10
HANOVER INSURANCE F-41
HARCOURT BRACE JOVAN. S-47
HARDWARE WHOLESALERS S-92
HARPER GROUP T-48
HARRIS BANKCORP B-49
HARTFORD LIFE L-30
HARVEST STATES COOPS. S-35
HERTZ S-43
HIBERNIA CORP. B-83
HILTON HOTELS S-91
HOLIDAY S-52
HOME DEPOT R-48
HOME GROUP F-20
HOME LIFE L-48
HOME OWN'S FED. S&L ASS'N I-50
HOMEFED CORP. I-6
HOMESTEAD FINANCIAL CORP. I-32
HOSPITAL CORP. OF AMERICA S-16
HOUSEHOLD INTERNATIONAL F-16
HOUSTON INDUSTRIES U-23
HOWARD SAVINGS BANK I-37
HUMANA S-22
HUNT (J.B.) TRANSPORT T-41
HUNTINGTON BANCSHARES B-60

I
IDS LIFE L-17
ILLINOIS CENTRAL R.R. T-36
ILLINOIS POWER U-40

RANK KEY

B–
COMMERCIAL BANKING COMPANIES
page 364

F–
DIVERSIFIED FINANCIAL COMPANIES
page 370

I–
SAVINGS INSTITUTIONS
page 372

L–
LIFE INSURANCE COMPANIES
page 376

R–
RETAILING COMPANIES
page 378

S–
DIVERSIFIED SERVICE COMPANIES
page 358

T–
TRANSPORTATION COMPANIES
page 382

U–
UTILITIES
page 384

IMPERIAL CORP. OF AMERICA I-15
INDIANA FARM BUREAU COOP. S-83
INDIANA NATIONAL CORP. B-82
IND. BNK OF JAPAN TRST. CO. B-99
INTEGRATED RESOURCES F-32
INTERPUBLIC GROUP OF COS. S-75
ITEL S-50
ITT F-8
J
JACKSON NATIONAL LIFE L-35
JOHN HANCOCK MUTUAL LIFE L-9
K
KANSAS CITY SO. IND. T-39
KELLY SERVICES S-67
KEMPER F-24
KEMPER INVESTORS LIFE L-42
KEYCORP B-44
KEYSTONE PROVIDENT LIFE L-37
K MART R-2
KROGER R-4
L
LANDMARK LAND F-40
LIMITED R-25
LINCOLN NATIONAL F-17
LINCOLN NATIONAL LIFE L-33
LINCOLN NATIONAL PENSION L-27
LOEWS F-15
LOMAS & NETTLETON FINAN. F-35
LONG ISLAND LIGHTING U-29
LONGS DRUG STORES R-50
LORIMAR TELEPICTURES S-99
LOWE'S COS. R-38
M
MACY (R.H.) R-17
MANUF. HANOVER CORP. B-7
MANUF. NATIONAL CORP. B-62
MARINE MIDLAND BANKS B-24
MARRIOTT R-14
MARSH & MCLENNAN COS. F-49
MARSHALL & ILSLEY CORP. B-73
MASS. MUTUAL LIFE L-11
MAXICARE HEALTH PLANS S-49
MAY DEPARTMENT STORES R-9
MAYFLOWER T-33
MCA S-29
MCDONALD'S R-18
MCI COMMUNICATIONS S-7
MCKESSON S-4
MCORP B-38
M.D.C. HOLDINGS S-97
MELLON BANK CORP. B-16
MELVILLE R-15
MERCANTILE BANCORP. B-76
MERCANTILE STORES R-44
MERCHANTS NATIONAL CORP. B-92
MERIDIAN BANCORP B-59
MERITOR FINANCIAL GROUP I-5
MERRILL LYNCH F-5
METROPOLITAN LIFE L-2
MEYER (FRED) R-46
MICHIGAN NATIONAL CORP. B-48
MIDDLE SOUTH UTILITIES U-13
MIDLAND ENTERPRISES T-50
MIDLANTIC CORP. B-36
MIDWAY AIRLINES T-40
MINNESOTA MUTUAL LIFE L-44
MNC FINANCIAL B-39
MONTGOMERY WARD HLDG. R-19
MORGAN (J.P.) & CO. B-4
MORGAN STANLEY GROUP F-9
MORRISON KNUDSEN S-37
MUTUAL BENEFIT LIFE L-18
MUTUAL OF AMERICA LIFE L-46
MUTUAL OF NEW YORK L-14
N
NASH-FINCH S-38
NASHUA S-89
NATIONAL CITY CORP. B-34
NATIONAL INTERGROUP S-24
NATIONAL MEDICAL ENT. S-25
NAT'L WESTMIN. BANCORP B-37
NATIONWIDE LIFE L-22
NBD BANCORP B-30
NCNB CORP. B-18
NCNB TEXAS NATIONAL BANK B-26
NEW ENGLAND MUTUAL LIFE L-13
NEW YORK LIFE L-6
NEW YORK LIFE & ANNUITY L-23
N.Y. STATE ELECTRIC & GAS U-46
NIAGARA MOHAWK POWER U-35
NIKE S-73
NORDSTROM R-42
NORFOLK SOUTHERN T-12
NORTHEAST SAVINGS I-24
NORTHEAST UTILITIES U-38
NORTHERN STATES POWER U-47
NORTHERN TRUST CORP. B-57
NORTHWEST. MUTUAL LIFE L-10
NORTHWESTERN NAT'L LIFE L-38
NORWEST CORP. B-33
NVR LP S-63
NWA T-9
NYNEX U-3
O
OGDEN S-84
OHIO CASUALTY F-39
OHIO EDISON U-32
OLD KENT FINANCIAL CORP. B-66
OLD REPUBLIC INT'L F-38
OLD STONE CORP. I-47
OVERSEAS SHIPHOLDING GRP. T-46
P
PACIFIC ENTERPRISES U-36
PACIFIC FIRST FINAN. CORP. I-26
PACIFIC GAS & ELECTRIC U-7
PACIFIC MUTUAL LIFE L-25
PACIFIC TELESIS GROUP U-6
PACIFICORP U-21
PAINE WEBBER GROUP F-18
PAN AM T-14
PENN MUTUAL LIFE L-39
PENNEY (J.C.) R-6
PENN. POWER & LIGHT U-33
PEOPLE'S BANK I-30
PERMIAN PARTNERS S-36
PERPETUAL FINANCIAL CORP. I-31
PHH GROUP S-51
PHILADELPHIA ELECTRIC U-17
PHM S-74
PHOENIX MUTUAL LIFE L-34
PINNACLE WEST U-14
PIONEER HI-BRED INT'L S-98
PITTSTON S-53
PNC FINANCIAL CORP. B-13
PRESTON T-34
PRICE R-24
PRIMERICA F-19
PRINCIPAL MUTUAL LIFE L-12
PROGRESSIVE F-46
PROVIDENT LIFE & ACCIDENT L-50
PROVIDENT NAT'L ASSUR. L-31
PRUDENTIAL OF AMERICA L-1
PUBLIC SERVICE ENT. GROUP U-19
PUBLIX SUPER MARKETS R-21
R
REEBOK INTERNATIONAL S-46
RELIANCE GROUP HOLDINGS F-30
REPUBLIC NEW YORK CORP. B-28
REVCO D.S. R-40
RIGGS NATIONAL CORP. B-70
RITE AID R-39
ROADWAY SERVICES T-19
ROCHESTER COMMUNITY SAV. I-49
ROUNDY'S S-41
RYDER SYSTEM S-9
RYKOFF-SEXTON S-78
RYLAND GROUP S-66
S
SAFECO F-33
SAFEWAY STORES R-7
ST. PAUL COS. F-26
SALOMON F-3
SANTA FE SOUTHERN PACIFIC T-10
SANWA BANK CALIFORNIA B-77
SCECORP U-15
SCHWAB (CHARLES) F-43
SEAMEN'S CORP. I-41
SEARS ROEBUCK R-1
SECURITY PACIFIC CORP. B-5
SERVICE MERCHANDISE R-32
SERVICEMASTER S-57
SERVISTAR S-85
SFFED CORP. I-46
SHAWMUT NATIONAL CORP. B-23
SIGNET BANKING CORP. B-51
SOCIETY CORP. B-56
SOO LINE T-35
S. CAROLINA NAT'L CORP. B-87
SOUTHEAST BANKING CORP. B-41
SOUTHERN U-9
SOUTHERN PACIFIC TRANS. T-18
SOUTHLAND R-13
SOUTHMARK F-29
SOUTHTRUST CORP. B-74
SOUTHWEST AIRLINES T-25
SOUTHWESTERN BELL U-8
SOUTHWESTERN LIFE L-32
SOVRAN FINANCIAL CORP. B-31
SSC HOLDINGS R-22
STANDARD FEDERAL BANK I-21
STATE FARM LIFE L-19
STATE MUTUAL OF AMERICA L-41
STATE ST. BOSTON CORP. B-64
STATESMAN GROUP F-44
STUDENT LOAN MAR. ASS'N F-13
SUBARU OF AMERICA S-48
SUNTRUST BANKS B-20
SUPER FOOD SERVICES S-54
SUPER VALU STORES S-3
SYSCO S-13
T
TALMAN HOME FEDERAL I-29
TANDY R-29
TCF FINANCIAL CORP. I-36
TEACHERS INSUR. & ANNUITY L-5
TELE-COMMUNICATIONS U-28
TESORO PETROLEUM S-80
TEXAS AIR T-5
TEXAS EASTERN U-44
TEXAS UTILITIES U-12
TIGER INTERNATIONAL T-22
TONKA S-96
TOYS "R" US R-26
TRAILER TRAIN T-38
TRANS WORLD AIRLINES T-13
TRANSAMERICA F-14
TRANSAM. LIFE & ANNUITY L-29
TRANSAM. OCCIDENTAL LIFE L-36
TRANSCON T-45
TRAVELERS L-8
TRAVELERS CORP. F-7
TRUSTCORP B-81
TURNER S-26
TW SERVICES R-30
U
UAL T-2
UNIGROUP T-31
UNION BANK B-42
UNION ELECTRIC U-42
UNION EQUITY CO-OP. EXCH. S-59
UNION PACIFIC T-7
UNITED BANKS. OF COLO. B-84
UNITED JERSEY BANKS B-52
UNITED PARCEL SERVICE T-1
U.S. BANCORP B-45
UNITED STATES SHOE R-41
UNITED STATIONERS S-100
UNITED TELECOM. S-6
UNIVAR S-81
UNUM LIFE L-45
US WEST U-5
USAIR GROUP T-8
USF&G F-23
V
VALLEY NATIONAL CORP. B-47
VARIABLE ANNUITY LIFE L-20
VIACOM S-68
VONS COS. R-27
W
WALGREEN R-20
WAL-MART STORES R-3
WASH. MUTUAL SAVINGS I-28
WASTE MANAGEMENT S-19
WELLS FARGO & CO. B-11
WESTERN S&L ASS'N I-33
WETTERAU S-15
WHEELABRATOR GROUP S-70
WINN-DIXIE STORES R-11
WOOLWORTH (F.W.) R-12
Y
YELLOW FREIGHT SYSTEM T-21

■ THE DOLLAR'S FUTURE • HOW TO HANDLE THE PRESS • THE AIR TRAVEL MESS ■

JUNE 19, 1989

FORTUNE

AT&T STARTS TO SCORE

How CEO Bob Allen is changing America's most entrenched corporate culture

*1056**********5-DIGIT 20814
*S99ESS520S91*E [illegible]
[illegible]
[illegible]
BETHESDA MD 20814
10093
0 724434 2

JUNE 19, 1989

FORTUNE

"The best decisions get made for the customer much further down in the organization."
PAGE 58

ABOVE: Bob Allen being made up in Washington, D.C., for a TV appearance, photographed by Louis Psihoyos–Matrix.

COVER: Psihoyos snapped Allen at Baltusrol Golf Club in Springfield, New Jersey.

MANAGING/Cover Story

BOB ALLEN RATTLES THE CAGES AT AT&T 58

This quiet executive went through a profound personal and professional reassessment when Jim Olson, his friend and predecessor as CEO, died in office. Allen's conclusion: The company's culture must change—and so must he. "Every one of us can fall into the trap of thinking, 'I don't need to change,' " he says. Allen went on to do things no AT&T CEO had ever done before. The results are beginning to show up, and even some competitors have words of praise. *by Andrew Kupfer*

MANAGING

SMART WAYS TO HANDLE THE PRESS 69

As Exxon's ordeal shows, dealing with reporters can be tough. Here are 14 guidelines for businesses to follow. *by Stratford P. Sherman*

THE WORLD

HOW CHINA'S CHAOS AFFECTS THE WEST 77

Whatever the immediate outcome, communism is in crisis worldwide. We should cheer, not fear, the reform forces from Beijing to Budapest, Moscow to Warsaw. *by Richard I. Kirkland Jr.*

POLITICS & POLICY

SHOULD AIRLINES BE REREGULATED? 82

No. Deregulation has been a triumph overall, and recent talk of rolling it back makes little sense. But Washington still must ensure that competition survives. *by Kenneth Labich*

EXECUTIVE LIFE

HOW A TOP BOSS MANAGES HIS DAY 95

You'll find Bob Lutz, Chrysler's No. 1 operating executive, in lots of meetings, visiting people—and rarely behind a desk. *by Alex Taylor III*

THE ECONOMY

ARE WE TOO SCARED OF INFLATION? 105

We sure are, say some dovish economists, and it isn't worth a recession to cure it. They think we can live with steadily rising prices. Trouble is, they're *wrong.* *by Charles G. Burck*

VOL. 119, NO. 13

"We buy in the face of the fear and sell when everyone else is getting greedy."

PAGE 49

"They were hard up, and he took their pants off."

PAGE 114

"More and more, industry is asking: 'How do we get people trained *before* we hire them?' Vocational schools do this."

PAGE 127

"If you look at it today, it sounds totally crazy. But those were the go-go days of biotech."

PAGE 141

"I really believe our ultimate competitive advantage is that we essentially went broke."

PAGE 147

"Women tend to be more human. And more of them working can create a new image for Japan."

PAGE 153

MONEY & MARKETS

THE SCREWIEST S&L BAILOUT EVER 114
After wealthy Texans ran the huge thrift into the ground, the feds sold it to billionaire Ronald Perelman for a song. The old owners came out well. But the taxpayers? *by Brett Duval Fromson*

EDUCATION

THE NEW, IMPROVED VOCATIONAL SCHOOL 127
Worried about the shortage of technicians? Can't find people who can communicate and solve problems? Here's hope. *by Nancy J. Perry*

WEST GERMANY'S COMPETITIVE ADVANTAGE 136

ENTREPRENEURS

WHAT A WAY TO START A COMPANY! 141
SmithKline has put more than $70 million into Nova Pharmaceutical, which didn't even have a lab before it went public. *by Gene Bylinsky*

CORPORATE PERFORMANCE

COMPANIES TO WATCH 147
Continental Bank comes back. Plus: Loctite, Westmark International, Crown Crafts, and J&J Snack Foods.

JAPAN

JAPAN DISCOVERS WOMAN POWER 153
Labor-short Japanese companies are making managers of young college graduates once condemned to be mere office ladies. *by Sally Solo*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 8
The shrinking business globe, Wall Street complains about corporate pay, and more.

FORTUNE FORECAST 19
Put the dollar in perspective: It's way below the peak, and will drop again by year's end. Exports are safe. *by Vivien Brownstein*

PERSONAL INVESTING 49
Bonds that look good now. *by John J. Curran*

Also: Which rails to ride, getting service from full-service brokers, and Portfolio Talk with Roger D. Newell of Newell Associates.

FORTUNE PEOPLE 161
Roy Bostock's red meat diet, shareholder Abbott Leban, and more. *by Mark Alpert*

ON THE RISE 162

BOOKS & IDEAS 187
In a brash work that will provide plenty of fuel for creative arguments, Peter Drucker tells how the world has changed. *by Paul Johnson*

LETTERS TO FORTUNE 191

KEEPING UP 195
The Senate's superliberal, unfree speech at Berkeley, and more. *by Daniel Seligman*

OFFICE HOURS 201
Your subordinates can tell you how to be a better manager. *by Walter Kiechel III*

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, John J. Curran, Marta F. Dorion, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Alan Farnham, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, CA), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Colin Leinster, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Bill Saporito, Lenore Schiff, Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo), Richard S. Teitelbaum
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Todd James, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Karen Andrews, Charles J. Attardi, Leslie Brenner, Jonathan Brown, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

NINA BARNETT

AT&T watcher Kupfer where FORTUNE's phones ring

CAN A LOW-KEY executive who nearly ended up running his father's Midwestern clothing store turn a galumphing Goliath of American business into a quick-witted global competitor? That is the question writer Andrew Kupfer pursues in this issue's cover story on Robert Allen of AT&T. Thrust into the chief executive's job unexpectedly after the sudden death of his predecessor a year ago, Allen kept the press at a distance for quite a while. What made him willing to open up to FORTUNE? "He spent his first year thinking about what he had to do and making some very big changes," says Kupfer. "Now he wants to report some progress."

ROBERT WALLIS—SIPA

Sally Solo

From Allen's point of view, FORTUNE was a natural choice for his first major profile. We have chronicled AT&T's and the Baby Bells' progress in a dozen or more stories—from a prescient special report just before the "big bang" shattered the phone monopoly in 1984 to a critical assessment last January of the breakup's effects. Several of those articles greatly benefited from contributions of reporter Kate Ballen, who joined Kupfer in interviewing myriad competitors and ex-AT&Ters to gain perspective on Allen and his achievements so far. "At 54, Allen is the youngest CEO in almost 40 years," Ballen notes, "and he will have more impact on the company than many before him."

Kupfer's skill in drawing out business leaders was sorely tested in his first encounter with his subject. Scheduled to accompany Allen on a 7:30 A.M. plane trip to Florida, Kupfer made a trial run to the Morristown, New Jersey, airport and spent the night nearby. But when he arrived the next morning at what he had been told was the appointed hour, he found a frosty Allen, who had nearly ordered the plane to take off without him. It turned out that the flight was really supposed to leave at seven. How did Kupfer get the CEO to warm up again? "I had my sheaf of questions," he says, "but I asked him instead about an old acquaintance of his whom my wife had worked for."

Also in this issue you will find the surprising story of a quiet revolution sweeping Japan: Young women, once content to be decorous office ladies until marriage, are starting to invade the male-only management ranks. The author, reporter Sally Solo, who has been living and working in Japan on and off for the past ten years, confesses that she never expected to write this story. International editor Donald Holt agrees: "We've been watching the huge buildup of well-educated women on the one hand and a growing labor shortage on the other and wondering, 'When will it happen?' " As Solo's engaging report on female auto designers, investment bankers, and advertising executives proves, when it will happen is now. And what it will mean is plenty.

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President; Michael J. Klingensmith, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, Fla. 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-541-1000. © 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company. **For subscription queries, call Customer Service at 1-800-541-1000.**

The Yokois in their U.S. home

hometown of Nagoya, about 170 miles south of Tokyo, and was introduced to seven different single women by a matchmaker. His pick: Atsuko Kawasumi, who tested new products at **Brother Industries**, a maker of typewriters and fax machines. Yokoi took her out eight more times for walks and coffee-shop talks. At the end of his two-week trip, Yokoi was an engaged man. Says he: "I felt relieved, not so much because I had found a fiancée but because I could escape the ribbing of my friends and associates." Tokai paid his round-trip fare back to Nagoya for the November wedding and even gave the groom a few extra days off for a honeymoon in Hawaii. The couple now live in Cliffside Park, New Jersey.

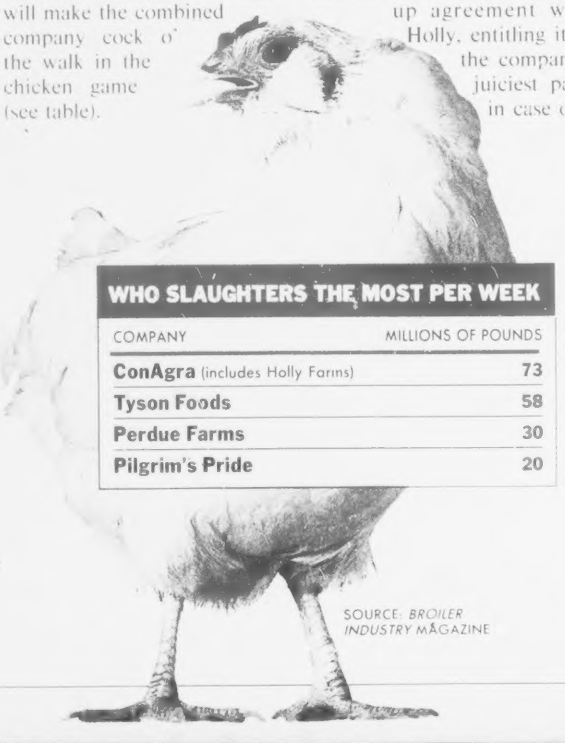
Sumitomo Bank gives its bachelors two chances to find a mate. It pays the full round-trip air fare for the first trip and half for the second. So far, only Japanese men have used this special leave. For one thing, career opportunities for Japanese women generally have barred them from foreign postings, though things are changing (see Japan).

Courtship leaves reflect the paternalistic practices that all Japanese companies espouse. Conglomerates like the **Mitsubishi** and **Mitsui** groups even have matchmaking services in Japan. Says one bank executive: "It's the company's obligation to give employees a chance to get married." – **F.H.K.**

BROILER WARS

■ Don Tyson, the chief executive of **Tyson Foods**, the country's biggest chicken processor, has been heard to kid analysts that he loves to kick the competition when they're down. It may be Tyson's turn for a taste of the boot. His seven-month pursuit of **Holly Farms**, another chicken processor, seems to have been ended by **ConAgra**, the food company that has agreed to acquire Holly for $1.32 billion in stock. ConAgra's average 1988 weekly kill of 41.7 million pounds and Holly Farms' 31.7 million pounds will make the combined company cock o' the walk in the chicken game (see table).

The Holly board of directors turned tail and headed for ConAgra's protective wing soon after Tyson made his intentions known last October. The feathers have been flying ever since. Holly's shareholders rejected their board's first merger agreement with ConAgra in April, preferring Tyson's $63.50 all-cash offer. ConAgra had a lockup agreement with Holly, entitling it to the company's juiciest parts in case of a takeover by a third party. The Holly board put the company up for auction. ConAgra eventually emerged as the winner after a nasty court battle. But the chicken world clearly hasn't heard the last cluck from Don Tyson. **– Bill Saporito**



WHO SLAUGHTERS THE MOST PER WEEK

COMPANY	MILLIONS OF POUNDS
ConAgra (includes Holly Farms)	73
Tyson Foods	58
Perdue Farms	30
Pilgrim's Pride	20

SOURCE: *BROILER INDUSTRY MAGAZINE*

A father-son talk: James and Laurence Tisch, betting on oil rigs

AN INVESTMENT TIP FROM THE TISCHES

■ Attention contrarian investors willing to wait for a payoff: Here's a chance to ride the coattails of the billionaire Tisch family. Through their **Loews** holding company—which owns **CNA Financial** insurance, **Lorillard** tobacco, and other properties, including 25% of **CBS**—the Tisches are buying offshore oil rigs, this at a time when the drilling services industry is barely afloat. They have already picked up three rigs from **Cliffs Drilling** for about $5 million apiece and plan to buy another seven from **Kaneb Services**. All are in the Gulf of Mexico.

James S. Tisch, executive vice president of Loews and son of CBS Chairman Laurence A. Tisch, explains the basic proposition: A worldwide glut of rigs and a flotilla of drillers up to their necks in debt equals a

BOB ALLEN RATTLES THE CAGES AT AT&T

Taking over at a tragic moment, this quiet CEO went through profound introspection. His conclusion: The company's culture must finally change—and so must he. ■ *by Andrew Kupfer*

Now used to the public requirements of his job, Allen is made up for a TV interview.

MRS. OLSON called me early Monday morning just after Jim died—5:29 to be exact. I had seen him at dinner on Friday, and knew there was some deterioration over the weekend, but no one expected his death. Barely before I was awake I was on the telephone with the other top officers. I got them all out of bed. We gathered that morning and began to make plans.

"We were all terribly distraught, but there was so much to do. It was really not until later that we had the time to mourn. Jim was such a vibrant and dynamic person. He really touched the lives of an awful lot of AT&T people, so it was a shock, and a particularly emotional burden for me because he had also been a good friend. I was aware that I was Jim's choice [to succeed him] and that I would probably be the board's choice. But I really thought I had another year or two to prepare."

On April 19, 1988, the day after James Olson died at 62 of colon cancer and the day before the company's annual meeting, Robert Eugene Allen was elected chairman and chief executive of AT&T. What a way to take over America's largest diversified service company. And what a time. AT&T was losing share in the all-important long-distance market—the major business that the consent decree allocated to it in the 1984 break-

REPORTER ASSOCIATE *Kate Ballen*

PHOTOGRAPHS BY LOUIS PSIHOYOS—MATRIX

"Every one of us can fall into the trap of thinking, 'I don't need to change.' It's like drug or alcohol addiction."

up. Within a week of Allen's appointment, the head of the computer operation—one of the company's big bets for long-term growth—quit. At the same time a joint venture with Olivetti of Italy was unraveling, and with it the hope that this quintessentially American company could throw off its fetters and compete globally in the computer market.

Psychologists say that the death of a friend can lead a person to profoundly reassess his life. Allen went through that wrenching experience, both personally as Olson's friend and professionally as his successor. This story presents the emotional process and the concrete results of that introspection. Allen says, "Jim's death caused me to pause for a few months and rethink a lot of things about the business, about where we ought to go and how I ought to lead."

HIS MAJOR CONCLUSION: that AT&T, the most entrenched corporate culture in America, must finally change and change for good. People had been talking about this need ever since divestiture, but too little had happened. The company could no longer operate as the regulated monopoly it once was, satisfied with predictable price increases, complacent about competition, uncritical of costs. To compete in fast-changing markets—for that is where divestiture has taken all AT&T's businesses—the phone company of old had to learn to get aggressive, to take chances, and above all, to move quickly.

Allen came to realize that the cultural revolution had to start with him. "Every one of us can fall into the trap of thinking, 'I don't need to change,' " he says. "It's like drug or alcohol addiction. You first have to face up to the fact that you've got a problem." In his first year as chief executive, Allen took strides no predecessor had ever taken. By writing down $6.7 billion in obsolete transmission equipment, he produced a $1.67 billion annual loss, the first since AT&T was incorporated 104 years ago. By spending $250 million to acquire Paradyne Corp., a competitor that manufactures data communications equipment, he signaled the end to the not-invented-here syndrome, a self-defeating sense of smugness that permeated a company where so much had, in fact, been invented.

As for his own style? "I've changed in that I'm not only tolerant of contention, but I encourage it," says Allen. "I am becoming more comfortable with decision-making being much further down in the organization, because that's where the best decisions get made for the customer."

Middle managers are gaining authority. Recently Allen met with several who presented an interim report on a new product proposal. He surprised them by giving the final go-ahead on the idea, even though a feasibility study would not be complete for several months. His decision was meant to make waves beyond that particular project. He says, "It was refreshing to them that I could hear the facts, ask a few questions, make a crisp decision, and turn them loose. Maybe that ought to be normal behavior, but it hasn't been normal behavior around our business." And Allen still has a way to go in eliminating petty procedures. A former executive who just left to work for a competitor recalls, "I was a manager overseeing a construction budget of $150 million, but I had to get approval to travel."

Though much remains to be done, Allen's first year has produced a string of victories. He is reorganizing the company—yes, again—but this latest shuffle should finally help it play a more competitive game. AT&T has won big government contracts, succeeded in important regulatory battles, and arranged a new venture with Italy's state-owned telephone company that will get it flexing unused muscle overseas. First-quarter profits were up 21%, and the stock price has risen almost 40% since August to a recent $34.625 a share. Even William McGowan, head of long-distance archrival MCI, has words of praise for AT&T's managers: "They certainly demonstrated that they realize they have to be more aggressive on costs and on customer responsiveness."

This funny-looking guy helps test the sound quality of phones in an anechoic (echo free) chamber in Indianapolis.

TALK TO people who know Bob Allen and they almost invariably describe him as a good listener. Those who don't really know him will say that he is, well, kind of dull. They point to his soft-spoken, low-key manner, his absence of flair. "Most people say I'm quiet and reserved, and by comparison to Jim Olson I suppose I am," says Allen. "He was quite an outgoing person, and had more energy than anybody I ever knew." Still, Allen is witty, albeit in a subdued sort of way; stubborn, yet smart enough to know when to change; a less than rousing speaker, yet an effective motivator.

When he talks about what he is trying to do at AT&T, he gravitates toward the timeless mantras of manager-speak: "quality, quality, quality"; "customer, customer, customer"; "teamwork, teamwork, teamwork." But when he reminisces, you hear about an all-American past steeped in values that give those phrases resonance.

An only child, Allen was born in Joplin, Missouri, in 1935. When he was 5, the family moved to New Castle, Indiana, a town of 20,000, where Chrysler is still the biggest employer. It is Indiana that Allen calls his home. He learned his first lessons about risk taking from his father, Walter, who quit his job of 21 years with the Newberry chain of five-and-dimes to buy a bankrupt children's clothing store. "Talk about courage and entrepreneurship," says Allen. "It was totally out of character for him, as I think it would have been for almost anyone who lived through the Depression. But he just didn't want the grief of working for someone else anymore."

Walter rescued the business by specializing in high-quality merchandise. "His clientele ranged from people who could afford the best at almost any price to people who really would have to scrimp to put nice clothes on their kids' backs. He always stood behind his products and delivered them himself, and if anyone wanted to return something, he would take it back without question. I learned a lot just from observing his focus on customer satisfaction."

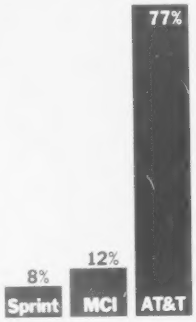
ALLEN HAS HELD a job since he was 8 years old. "God, I can't remember all the jobs I've had," he says. "I had a paper route and I cut grass. I worked in a men's clothing store. I cleaned house. I worked as a mechanic's helper. I worked on a pipeline—most difficult physical job I ever had—13 hours a day and seven days a week, unless it poured down rain. I worked on a surveying crew. I tassled corn one summer—boy, that's a pain in the ass. I don't even remember why we did it; something to do with cross-pollination. And I worked on a railroad gang, straightening track. There were eight blacks and me. They called me the college boy. I learned about a whole variety of people, what makes them tick and what motivates them. It gave me respect for people who do work that most of us don't think is particularly attractive."

The work paid for almost all of Allen's education at Wabash College, a men's school 80 miles away in Crawfordsville, Indiana, where he studied political science and economics. He honed his competitive instincts on the gridiron, playing end for Wabash the year it was selected as the all-state small-college team—"to my own amazement," he says, "and probably to the amazement of some of my teammates." (These days he plays golf—7 handicap—and jogs to keep fit.)

One game haunts him still. "We were playing Heidelberg, the No. 1 small-college team in the country, and we lost 14–13. One of the jobs I had on the team was filling the holes on the football field to be sure it was level. Late in the game I had a chance to intercept a pass in the flat, only 20 yards from the goal line. I could taste it. I could see it. And just as I reached out, I stepped in a hole and tripped just enough so that I could reach out and touch the ball, but I couldn't intercept it. To this day I've always thought about that game when I think of quality. If I had done the damn thing right, I'd have intercepted the pass and we would have won the game."

LONG-DISTANCE WARS

It towers dramatically over competitors MCI and Sprint, but AT&T has seen its share of the long-distance market fall 13 percentage points since divestiture.



ESTIMATES: EASTERN MANAGEMENT GROUP

After his junior year, Allen married a hometown girl who was attending nearby DePauw University. "I think his calmness attracted me," says Betty Allen. "Bob and I are very different. He's very low key, and I'm a talker. Bob was just a very, very kind and considerate person. And there was never any doubt in my mind that he would do well—not that I ever in my wildest dreams thought that he would be chairman of AT&T."

Allen's plans to go to law school evaporated when the first of the couple's five children arrived three days before graduation. He was offered jobs at IBM and Procter & Gamble but preferred Indiana Bell instead. His first assignment brought him to the heart of the business: As a traffic engineer, he mapped the most efficient pathways for telephone calls to follow through the local exchange's network of electromechanical switches. Next he supervised chief operators, who ran the company like master sergeants in those days. "You didn't dare dictate anything to the chief operators," he says. "I suspect I learned to sell there for the first time." He first met Jim Olson at Indiana Bell, and when Olson was president, he was secretary-treasurer.

BARTH FALKENBERG

No more switchboards in Columbus. Ohio long-distance operators have a $40 million computer system.

In 1960—Allen was still in Indiana—his father decided to retire. "He offered me the business," says Allen. "He laid it all out and showed me where he'd been and where he thought the store could go. It wasn't a big business by any means, but with three or four kids by that time and a grocery cupboard that was kind of bare, I must say it was very attractive. But after he got finished, he said, 'It's all yours if you want it, but I wouldn't recommend that you take it.' " Allen didn't.

Staying the course in the Bell System, he moved to Bell of Pennsylvania, then to Illinois Bell, then to AT&T as a vice president, and then to Chesapeake & Potomac Telephone Cos. as president. Six months before the breakup, Allen arrived at AT&T headquarters in Basking Ridge, New Jersey, as chief financial officer. Two years later he took charge of Information Systems. He brought cost cutting to that troubled office automation division, but not the winning strategy it needed. Named president and chief operating officer in 1986, Allen was being groomed for the chairmanship when fate gave him the job sooner than he expected.

SETTLING INTO his seat on the corporate jet, Allen stretches his legs and sighs. He has spent this day of May in Largo, Florida, at Paradyne Corp., his first visit since AT&T bought the company in February. His new troops—AT&T managers often refer to employees as troops—received him warmly. But now his body aches. "I have flat feet," he confesses, "so these plant tours kill me."

The Paradyne purchase is part of Allen's strategy to put AT&T's monopoly-era mentality into permanent amnesia. "We came out of a business that had a single culture," he says. "It was very paternalistic, thorough, slow-moving, and exceptionally proficient in accomplishing its mission, but in a static environment." AT&T didn't have to worry about speed in bringing out new products—it controlled the technology *and* the market. If the company took an extra year to develop a new office telephone system—hey, no problem, it would just sell the old one a little bit longer. Now, says Allen, "if you miss a year, you've missed a whole generation of products." The Paradyne deal demonstrates a quicker way to fill holes in AT&T's product line than internal development.

Paradyne was a good match for AT&T. It is a leading manufacturer of modems that let business computers communicate over nondigital phone systems. Besides, the Florida company had a solid base of business customers in the U.S. and a strong sales force overseas. But Paradyne had troubles too: Its reputation was still suffering from a scandal eight years ago, when it was caught trying to win a government contract for an encryption device with a bogus prototype. Its credibility now enhanced, AT&T Paradyne, as the business unit is called, has already won a million-dollar contract from Deloitte Haskins & Sells, the Big Eight accounting firm.

The latest reorganization—there have been about a half-dozen since divestiture—aims to bring AT&T's businesses closer to the customer. Now 19 business units are organized by product line, such as business communications, switching systems, and network computing systems. Each unit will be responsible for its own profits and losses and will have the authority to make decisions on pricing, marketing, and product development. Says vice chairman Randall Tobias, who is in charge of putting the structure into place: "This is a fundamental change in the way we run the business."

HOW AT&T STACKS UP

	REVENUES last 4 qtrs. $ millions	EARNINGS last 4 qtrs. $ millions	STOCK PRICE 5/23/89	Change from 12/30/88
LONG-DISTANCE CARRIERS				
American Telephone & Telegraph	$35,520	($1,567)	$34.625	20%
MCI Communications	$5,506	$434	$39.25	73%
US Sprint	$3,630	N.A.	$64.50*	39%
REGIONAL COMPANIES				
American Information Technologies	$9,988	$1,243	$59.375	24%
Bell Atlantic	$10,733	$1,336	$86.50	22%
BellSouth	$13,688	$1,684	$49.00	23%
Nynex	$12,825	$1,288	$77.625	18%
Pacific Telesis Group	$9,518	$1,205	$40.75	32%
Southwestern Bell	$8,511	$1,080	$51.75	28%
US West	$9,244	$1,141	$69.625	21%

*Stock price for United Telecom, Sprint's parent.

Though AT&T took a big loss in 1988, its stock has had a healthy run since the first of the year. Still, it trails the rivals' performance and that of most of the Baby Bells.

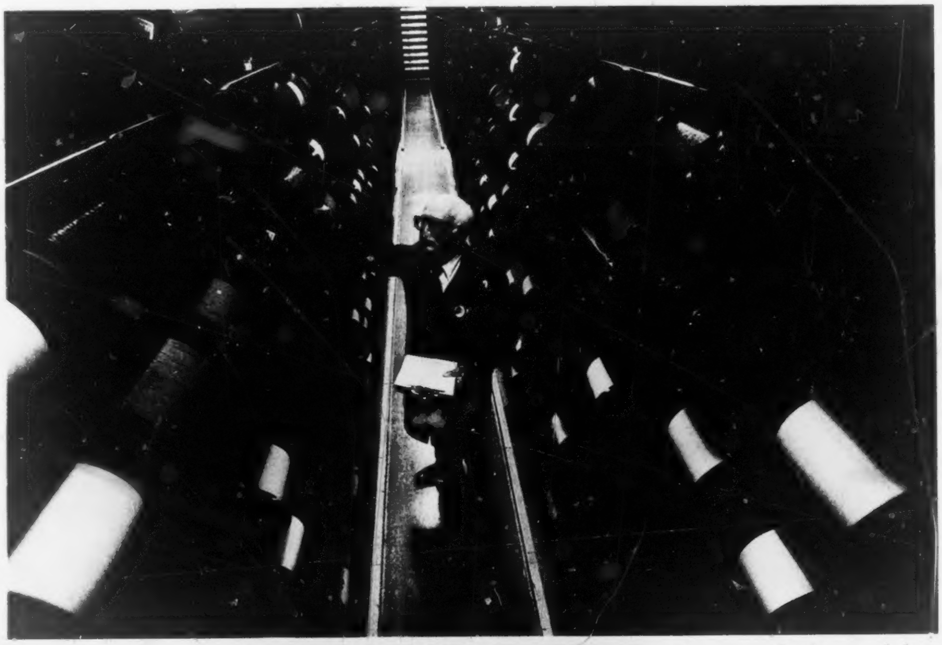
In fact, it essentially reverses Jim Olson's old scheme. In his attempt to reorganize the company, Olson consolidated the long-distance organization with the phone and computer groups. His structure had a sensible rationale: The units he inherited, particularly those that sold computer products, behaved like separate fiefdoms and often approached customers with different solutions to the same problem. Says John Malone, president of the consulting firm Eastern Management Group: "You could measure in nanoseconds how long it took the customer to reach the boiling point." To keep customers cool under the new regime, the group presidents will have to make sure that the business units don't go back to getting in one another's way. For large customers, sales reps will work in teams, with members present from each unit that does business with the client.

THE SMALL-COLLEGE football star is encouraging new approaches to competition—especially in the superwar over business telephone customers. The long-distance market is booming, thanks to rates that have dropped about 40% since 1984, the proliferation of 800 lines, and those increasingly ubiquitous fax machines. After getting battered by MCI and Sprint in television and print advertisements, AT&T has started getting tougher: Its ads now hit competitors by name.

The head of marketing for the $14-billion-a-year unit that sells long-distance service to businesses is Joe Nacchio, 39, a frank, fast-talking New Yorker with a Type A personality—the antithesis of the old AT&T image of the pasty-faced shut-in who sat at his desk taking customers' orders. In an innovative TV promotion last year, Nacchio offered small-business customers of MCI and Sprint a service guarantee: If they switched to AT&T and were unsatisfied for any reason, the company would pay to switch them back to their former carrier. The campaign attracted 28,952 new clients, and Nacchio says that only five have asked to be moved back.

Spurred on by improvements that MCI

and Sprint have made in their telephone networks, Allen is accelerating AT&T's program. After all, long distance is AT&T's biggest business, accounting for a little more than half of 1988 revenues. (Of the rest, over 20% comes from the sales of communication equipment and computers, and a little under 20% is from telephone transmission and switching equipment.) He has earmarked $3 billion in each of the next two years for network improvements, which will include replacing copper wire with optic fiber. This will make transmission cheaper and more efficient.

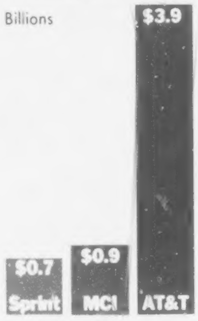


ALLEN'S PLANS for computers illustrate a cardinal rule for executives (and golfers): Find where your advantage lies. When he became CEO, the company's data-processing business was in turmoil. Its joint venture with Olivetti had descended into mutual mistrust. AT&T flopped selling Olivetti's personal computers in the U.S., and Olivetti couldn't move AT&T's minicomputers in Europe. Olivetti then infuriated AT&T by selling a competitive computer of its own on the Continent. To make matters worse, Vittorio Cassoni, an adept Olivetti manager whom AT&T borrowed to shore up its computer business, returned to Italy as Olivetti's managing director.

Spools of optic fiber (top) start out as glass rods (bottom) built up layer by layer.

1988 CAPITAL INVESTMENT

Competitors have spent billions on their networks. So AT&T is moving faster to install digital switches, fiber-optic cable, and other network technologies.



In the past year AT&T has continued its move away from plans to be a big seller of stand-alone computers. Instead the company is focusing on marketing computers arranged in networks to large customers—and if anything is AT&T's forte, it is networking. The company is also working hard to promote Unix, the computer operating system it developed. Though Unix is nonproprietary—open for others to copy—AT&T makes money from licensing the use of its version. As Unix proliferates, AT&T's influence in the industry will solidify: Software designers will write more applications that use the system, which in turn will create greater demand for networks that run on it. Under Robert Kavner, who had been the chief financial officer, the computer business expects to break even in 1990 for the first time after seven years of losses.

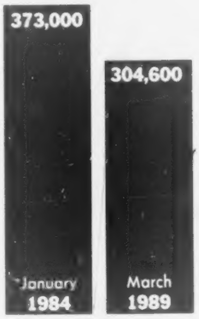
With competitive pressure and slow growth likely in many of AT&T's domestic businesses, Allen aims to make AT&T a full-fledged resident of the global village. According to the Eastern Management consulting firm, foreign markets account for 60% of worldwide spending on telecommunications and data processing. AT&T's international business remains piddling. Under a joint venture with Italtel, Italy's state-owned phone equipment manufacturer—the deal awaits government approval—AT&T will supply digital technology to Italtel. That's a colossal opportunity in itself: Italy's budget for network modernization is $28 billion over four years. The companies will also join to market and manufacture phone equipment for the European market.

The agreement gives AT&T a boothold in Europe just in time for the unification of 1992. It is also evidence that AT&T has learned from the experience with Olivetti: AT&T will press for a clear understanding with Italtel, so that the Italian company will not start marketing its own equipment without its American friend.

Big improvements though they are, these changes represent just the first stirrings of what Allen wants his company to be. Most troublesome to AT&T's future is the persistence of regulation in the long-distance market. The company has won victories in this arena: Most recently the FCC threw out rules that limited its profits to a designated rate of return. New regulations will

AT&T'S SHRINKING WORK FORCE

Two major rounds of job reductions—one of 24,000 and the other of 32,000—have helped reduce the troop strength 18% since the breakup. Morale has suffered.



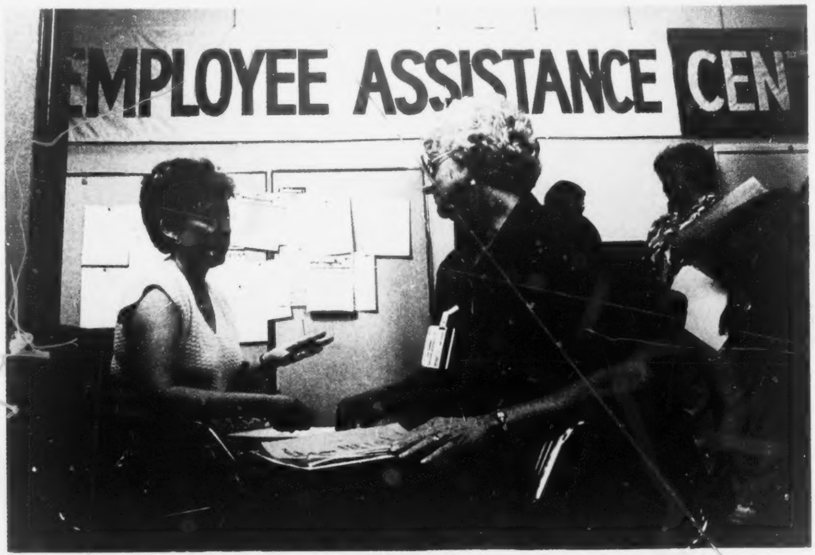
impose a price cap that ties maximum rate increases to inflation without limiting AT&T's earnings—and historically long-distance rates have been coming *down*. As long as competition allows, the company will now be able to keep much of the savings from cost cutting instead of having to pass all of them along to consumers. Michael Kennedy of the Arthur D. Little consulting firm estimates that within five years the price-cap rules will add 75 cents a share to earnings, estimated at $2.50 a share for 1989. AT&T also won the right to offer discounts to big business customers. Recently it asked the FCC if it could cut prices on long-distance services for consumers and small businesses by $140 million annually.

What AT&T really wants is the same hands-off treatment as Sprint and MCI. The FCC considers AT&T to be the "dominant" long-distance carrier, so the agency retains the right to approve any discounts to make sure they are not predatory. AT&T general counsel John Zeglis counters that competitors have so much capacity that his company no longer has monopoly power, and the dominant tag is unfair. "It took us a year and a half to get Reach Out America approved," he says of AT&T's residential discount package. "MCI is about to initiate the same thing, and they can do it in a matter of days."

AT&T also has to worry about rearguard action by the Baby Bells, which are lobbying for legislation that would let them provide information services and make telephone equipment. AT&T will not oppose their attempt to create information, but is against their entry into manufacturing, which was forbidden to the regional companies under the terms of divestiture.

No matter how sharp a competitive spirit Allen can instill in the troops, AT&T will have a hard time growing in some of its biggest businesses. The company recently introduced Definity, a highly praised digital telephone system that can serve both large and small companies. But competition, mainly from Northern Telecom and IBM's Rolm, is stiff. AT&T fought hard to win 60% of a multibillion-dollar contract to replace the federal government's telephone system; Sprint has the rest of the business. But the present system was built and maintained by AT&T, so the company is just barely retaining its hold.

Another big problem: a predivestiture accounting system that does not precisely show how costs are associated with revenues. "In the long-distance business, at best AT&T knew what it was getting by state," says Kennedy of Arthur D. Little. "It still doesn't know if it makes money in New York City." The company is developing a new bookkeeping system.



ROB NELSON/PICTURE GROUP

A counselor gives advice to an 18-year employee who is being laid off in Winston-Salem.

Then there are the people, the 304,600 survivors of deregulation, reorganization, and top-management changes. Morale, to put it mildly, is shaky. Joel Gross, a telecommunications analyst with Donaldson Lufkin & Jenrette, says, "All the employees are optimistic about the company, but at the same time they are scared out of their minds about their jobs." Allen has not done anything to make them feel more secure: Last year's write-off has a provision for future staff reductions.

Predictably, there is trouble on the labor front. The week before contracts with the Communications Workers of America and the International Brotherhood of Electrical Workers expired, the union members voted to authorize a strike. A major issue: health care costs. Under the old contract AT&T paid every cent of medical care for employees and retirees, and their dependents—at a price of $1 billion a year. AT&T wants employees to pay more of their doctors' bills.

BECAUSE OF these impediments, financial analysts think revenue growth will be held to about 5% a year. But that's not too bad, considering that sales over the past four years rose a *total* of 6%. The biggest spur to earnings will be cost cuts, inspired by the price-cap ruling.

Perhaps the most encouraging sign for AT&T is that Allen is finally getting the company's managers to change. Says Gross of Donaldson Lufkin & Jenrette: "A lot of good young bulls below top management will carry the company into the 21st century." Members of this rising generation may bring AT&T all the way into the post-regulatory world. In the meantime one former chairman thinks the company is in good hands. "Allen can set priorities and articulate them so that people can understand them clearly," says Charles Brown, the man who led AT&T through the breakup. "He is an orderly person. He knows the business well. It is good for AT&T to have a steady person now."

And one who appreciates the importance of avoiding potholes. ■

ARE WE TOO SCARED OF INFLATION?

We sure are, say some dovish economists, and it isn't worth a recession to cure it. They think we can live with steadily rising prices. Trouble is, they're *wrong.*

■ *by Charles G. Burck*

FOR MORE THAN A YEAR the Federal Reserve has been tightening the money supply, and short-term interest rates now are some 2½ percentage points higher. The payoff may be coming, judging by such signs of slower economic growth as lagging industrial production and retail sales. But what if the Fed has been too rigorous, and the next recession is beginning to take shape? Must the U.S. murder its longest peacetime expansion in order to choke off inflation?

So far the Fed gets high marks for cutting down the oxygen without killing the patient. But inflationary pressures are building from growing wage demands at home and rising prices abroad. FORTUNE expects that inflation in the U.S. will reach a persistent 5.5% rate next year. That's far too high for comfort: If the Fed loosens its grip, the rate could go higher still.

Some notable economists think all this nail biting is not necessary. Yes, they say, we should resist rising prices, but not with recession's brutal bludgeon. The cost to the nation is too high, the production that is lost through layoffs is gone forever, and there are less stinging ways to control rising prices. Ranged against these doves are such hawks as W. Lee Hoskins, president of the Cleveland Federal Reserve Bank, who argues that we should give no quarter in the war against inflation. The eventual goal, he says, should be none—zero, zip, *nada*—whatever the costs may be.

FORTUNE flies toward the hawkish end of the formation. By its nature inflation breeds the expectation that prices will rise even faster. Therefore, the least painful course over the long term is to dampen that expectation, even at the risk of a downturn. But recession is a blunt and mean instrument, and should it seriously threaten the economy, Congress will likely listen sympathetically to the doves and lean heavily on the Fed to reverse policy. If Congress bullied the Fed successfully, that would invite further inflation—and an even more painful correction eventually.

Recession exacts a punishing tax. By rule of thumb, unemployment would have to rise a percentage point from recent levels—that is, 1.2 million more people out of work—and stay there for a full year to knock just half a point off the inflation rate. The price tag: some 2% to 2.5% less GNP growth. Princeton economist Alan S. Blinder calculates that the total levy on the nation from excess unemployment between 1974 and 1986—much of it attributable to recessions—was a stunning $1.9 trillion in 1986 dollars. Add to this the penalty paid by investors in lower share values and lost divi-

REPORTER ASSOCIATE *Charles A. Riley II*

The Fed's Hoskins: America's goal should be to reach zero inflation over three to five years.

ANTONIN KRATOCHVIL

dends and the hardship meted out to the poor and near poor who lose their jobs. Blinder blames the recessions of 1980 and 1982 for raising the proportion of people living below the official poverty line from 11.7% in 1979 to more than 15% in 1983 and for contributing to the widening disparity of incomes in the 1980s.

WHAT A GRISLY TOLL, say the doves, who count Blinder among them. How extravagant a price to pay for what may be only a temporary reprieve from inflation—or worse, a misguided effort to solve a problem that doesn't exist. Because it's not clear that today's unemployment is low enough to push inflation higher.

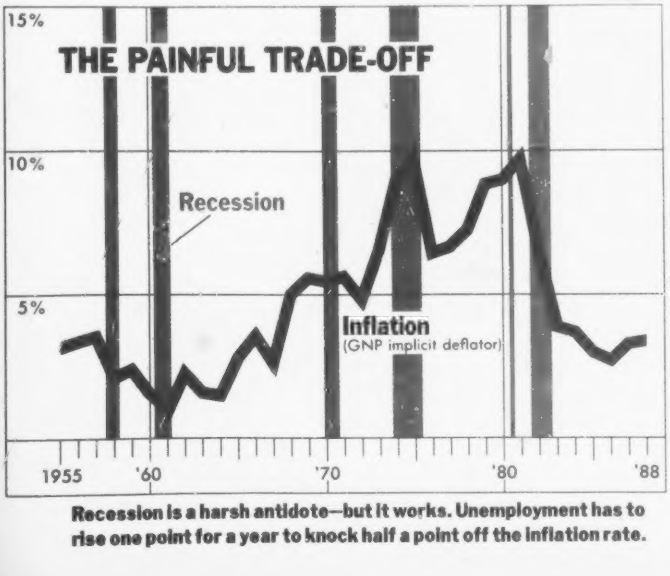
The rate that would do that is known in economese as Nairu, for non-accelerating inflation rate of unemployment. When inflation began to speed up last year, most economists thought Nairu was around 6% or even 7%. They figured Blinder had gone soft in the head when he declared in 1987 that the rate was probably *below* 6%. But Blinder was right. Today, by most estimates, Nairu is between 5% and 6%. Now imagine what price the U.S. might have paid if, following the conventional wisdom, a hamfisted Fed had put the economy through a wringer in 1987 to head off inflation when unemployment dropped toward 6%.

SHONNA VALESKA

Princeton's Blinder: The production that is lost as a result of recession is gone forever.

What happened to confound yesterday's estimates? Two structural changes in the economy of the 1980s—the decline of unions and the growth of international competition—broke the easy postwar patterns in which big industries like steel and autos caved in to labor and passed the increased costs on to a captive marketplace. When labor markets tighten today, wages and prices do not go up in knee-jerk fashion. Says Nobel laureate James Tobin of Yale: "It seemed improbable 15 years ago that there would ever be such concessions and actual rollbacks in wages and benefits."

In comparison with the dramatic penalties of recession, the costs of inflation are hard to pin down. Supposedly it is the "cruelest tax," victimizing most poignantly the elderly and others on fixed incomes. It plays havoc with financial planning and investment decisions and shifts wealth arbitrarily among groups. Shareholders and debtors gain, while bondholders and creditors lose. But doves such as Blinder argue that there aren't so many old folks on fixed incomes nowadays because Social Security payments are indexed. And variable-rate loans mean fewer gains for debtors at the expense of creditors.



Recession is a harsh antidote—but it works. Unemployment has to rise one point for a year to knock half a point off the inflation rate.

All serious economists agree that a country has to counter inflationary surges by reining in demand. Where the doves peel off from the consensus is in their belief that *anticipated* inflation, the kind that reflects price expectations built up over time, is not much of a problem. When prices rise steadily and predictably, they say, wages, pensions, loans, and other contracts adjust.

In today's deregulated financial markets, for example, interest rates are more likely either to incorporate the anticipated rate as an inflation premium over the real rate or to float up and down with changes. That's true not only for corporate and government borrowing but even for the spending money consumers keep in interest-bearing checking accounts.

The trouble is, expectations change. A year ago inflation was 4%; this year it's closer to 5%. Those rates of inflation do creep up. If the nation decides 5% is acceptable but the political cost of maintaining it starts to rise, well, who's to say that 6% might not be acceptable—and 7% and so on? Too many people gain from inflation, not least the government's big spenders, who get more money without having to ask the voters for it.

continued

Yes, the doves do raise legitimate challenges to assumptions about the costs of steady inflation that hawks accept as holy writ. But the doves' arguments are not persuasive. While workers who are well organized or in tight labor markets may get their raises, the poor and the near poor have no such bargaining power. Their meager earnings may catch up to the rate of inflation eventually, but a couple of years of lagging behind can be rough when the prices of rental apartments and secondhand cars are rising. Inflation raises the cost of financial transactions and distorts investment patterns. A rate higher than those of major trading partners lowers living standards to the extent that it depresses the dollar. Financial markets will exact stiffer interest payments.

A tax code that ignores inflation creates more inequities. For example, the interest earnings that lenders get incorporate an inflation premium to cover the loss of principal, but all the earnings are taxed. Take a bondholder in the 28% bracket earning a nominal 9% on a Treasury bill when inflation is running at a steady 5%. Her effective interest is 4%, but she's taxed on the whole 9%, a 63% rate on the actual return.

Inflation gets clearly more painful when the rate accelerates. The higher and more volatile the rate, the more arbitrary the redistribution of wealth and the more time and energy everybody spends trying to outsmart the price spiral instead of producing useful goods and services. If foreign investors conclude that U.S. inflation is heading notably higher, their flight from the dollar could provoke the recession everyone wants to avoid.

RISING PRICES have to be resisted, but how? The job should be relatively simple today, when the inflation pressure is coming from an economy bumping up against its productive limits. The federal budget is a powerful tool for managing demand, and cutting it would cool the fevers. Though higher-than-anticipated tax revenues have shrunk the deficit 17.9% so far this fiscal year, Washington is dragging its feet on serious cost cutting. As a result, economists are talking again about some long-discredited alternatives.

That perennial favorite, wage and price controls, has failed every time and everywhere it has been tried, but visionaries keep dreaming up new approaches anyway. James K. Galbraith, an economist at the University of Texas and son of the eminent John Kenneth Galbraith, recently proposed an elaborate scheme that would synchronize all wage bargaining and peg cost-of-living adjustments not to past price increases but to a projection by the President for the coming year. Alas, there's no chance of getting labor and management to agree to such a system—even if it would work.

An older notion, the tax-based income policy, or TIP, would be easier to superimpose on the present system. It would use the tax code to penalize companies and employees for raises in excess of the inflation rate—or reward them if they settled for less. But if Americans didn't tip their hat to TIP when inflation hit double digits,

NORTHWEST

THERE'S AN ART TO ESTABLISHING BUSINESS ROOTS IN TOKYO.

To establish a strong rapport with your Tokyo contacts takes time, patience, insight and more time. A country that considers a 300-year old bonsai tree an art form takes a little time to understand.

EXCHANGING MEISHI (business cards) is an important formality in establishing a relationship. You go first, with a bow or handshake, and then your card, presented Japanese side up to assist with pronunciation and cases where English capabilities are limited. Study the card you receive, repeating the surname, the first name on the card, to be sure you have the right pronunciation. Treat cards with the respect you would bestow upon their owners.

WHERE TO GET YOUR BASIC BURGERS There's a Hard Rock Cafe in Tokyo if you have the wild craving for fries, and the quality of the hamburgers is superb.

DO IT YOUR WAY The nightclub can be more important than a meeting, so you'll probably be invited to one. The hottest thing is "Kara-oke." Music and images play on a video system and you sing along into a microphone. Do not decline an invitation to sing or you'll be rejecting your host. Most songs are Japanese, but don't panic—"My Way" is always available.

LOOK TO US NORTHWEST AIRLINES

there is less reason for them to do so now. Tobin, who urged an incomes policy in the late 1970s, has laid aside the quest, though he argues that the government should post guidelines and jawbone employers. A generalized threat by the Fed to crack down when inflation heats up is no threat at all, he argues, because people will keep struggling to improve their relative wages—cops will want more than firemen, Harvard professors more than their Yale colleagues. But who would heed the guidelines, either?

INDEXING remains popular with the if-you-can't-lick-'em-join-'em crowd. Blinder, for example, thinks it could solve the problem of the tax code's distortions. The capital gains schedule might incorporate a table of inflation factors to calculate increases for stocks or bonds bought in the past and sold during the tax year. The figuring could get complicated, he allows, but "it would be trivially simple compared to filling out a passive loss deduction form, which many of us have to do now."

HEADING IT OFF

COUNTRY	DEGREE OF CENTRAL BANK INDEPENDENCE	AVERAGE INFLATION RATE
Italy	½	16.1%
Spain	1	15.2%
New Zealand	1	12.7%
Britain	2	12.3%
Australia	1	10.5%
France	2	10.2%
Sweden	2	9.8%
Denmark	2	9.1%
Norway	2	8.8%
Canada	2	8.1%
United States	3	7.2%
Belgium	2	6.8%
Netherlands	2	5.8%
Japan	3	5.0%
West Germany	4	4.1%
Switzerland	4	4.0%

SOURCE: NBER MACROECONOMICS ANNUAL 1988

The scale runs from 0, totally beholden to politicians, to 4. Where the central bank is strong, citizens expect less inflation.

But what kind of signal does indexing send? Economists Lawrence Summers of Harvard and Stanley Fischer argue that it may be useful if people do not expect prices to rise much anyway. Otherwise, it confirms suspicions that the government is not serious about fighting inflation.

Like it or not, a stern central bank, its gimlet eye fixed disapprovingly on the punch bowl, is the best line of defense. Because inflation in the short run usually means more growth and only minor price increases, elected officials are constantly tempted to tolerate it. It's no coincidence, Summers says, that countries whose central banks are highly independent of other government policymakers do best at containing inflation (see table).

Though the Fed's policies have raised short-term interest rates over the past year, long-term rates have held steady, implying that the financial markets don't expect the inflation rate to rise. Confirmation comes from the most recent survey of institutional investors by Drexel Burnham Lambert's chief economist, Richard B. Hoey. They anticipate a rate of about 4.7% over the next decade—practically the lowest rate they've foreseen since Hoey began surveying in 1978.

continued

So before you go, dig out some of your old records and practice up.

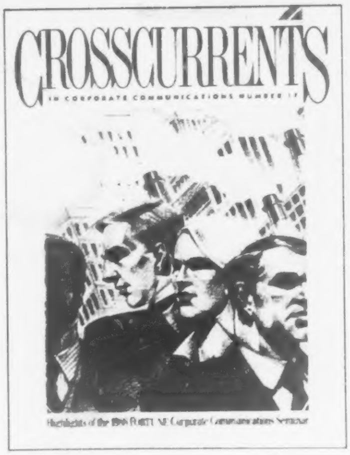
NORTHWEST NOTES. In addition to nearly 60 flights a week to Tokyo from over 200 U.S. cities, a spacious Executive Class, a First Class with all the luxury and comfort you deserve—we give you something no other U.S. airline can offer—the knowledge, insight and information that come after 40 years of helping people do business in Asia.

NORTHWEST ASIA SERIES

INTERNATIONAL RESERVATIONS **1-800-447-4747,** U.S. RESERVATIONS **1-800-225-2525**

© 1989 Northwest Airlines, Inc.

AIDS
BLACK MONDAY
CORPORATE IDENTITY
RESTRUCTURING
TAKEOVERS
OUR AGING POPULATION
GLOBAL COMPETITION


CROSSCURRENTS
IN CORPORATE COMMUNICATIONS NUMBER 17
Highlights of the 1988 FORTUNE Corporate Communications Seminar

These words were heard frequently as top communicators from all over the country gathered at the 1988 FORTUNE Corporate Communications Seminar to discuss "Communication in an Era of Change."

Now you can get the inside stories on how Allstate, MBIA, IBM, ITT, Motorola, Ryder and other companies are operating and surviving in a dramatically changed business environment.

You'll find their ideas and strategies in *Crosscurrents #17*, FORTUNE's annual book of seminar presentations. It's a rare opportunity to see how companies are defining their objectives and refining their values to meet today's challenges.

Order your copy today. Send your check (made payable to FORTUNE) for $22 (add $2 for addresses outside the U.S.) to:

FORTUNE *Crosscurrents #17*
Time & Life Building
Room 15-35B
Rockefeller Center
New York, NY 10020

FORTUNE

THE ECONOMY

In congressional testimony last spring, Alan Greenspan said his long-term goal is a rate of inflation "approximating zero," implying that anything much higher will sooner or later fail the expectations test. Cleveland's Hoskins, one of the Federal Reserve Board's superhawks, has a detailed plan for reaching zero. But his Godzilla gambit implies regular bouts of recession—or the risk of them—and seems no more politically viable than an incomes policy.

THE FED, he says, should declare that it is committed to reducing inflation gradually over the next three to five years until the average annual rate is zero. It should spell out its plan by setting an upper limit on a broad price measure like the CPI, and then knock that limit down by a percentage point a year. After any month in which the CPI rose above the prevailing cap, the Fed's goal—or in Hoskins's take-no-prisoners words, its "single, dominant, all-inclusive objective, without regard to any other objective of policy"—would be to bring the CPI under its limit again, even at the cost of inducing a recession.

Most economists suspect that zero inflation is not a practical target, if only for technical reasons. Poor measurements of productivity in service industries, for example, tend to overstate inflation by understating actual output gains. In the end even Hoskins hedges slightly by defining zero as less than 1% a year.

The principle of reducing inflation to the lowest technically feasible rate leaves room for some disagreement about the actual level. During the 1950s most economists accepted the prevailing 1.5% as equivalent to zero inflation. The West Germans become anxious at 1% or less, the Swiss at 2%, and the Japanese at 2.5%. The main point is that keeping inflation stable at *any* rate means convincing people that there will be no acceleration. The faster prices rise, the harder it is for a government or central bank to remain credible.

Americans fear inflation deeply because they understand that small doses make life easier for more people than care to admit it. Like the vices of prim Victorians, the enjoyment of inflation is best practiced on the sly if it's indulged in at all. Letting it into the parlor raises the terrifying prospect that it will race out of control, like so many other vices. As First Boston economist Albert M. Wojnilower puts it, "We've delegated the conscience that governs us, but it remains our own." F

C8400-1

■ POLL: CEOs ON CHINA • WESTINGHOUSE • FRED JOSEPH: INSID

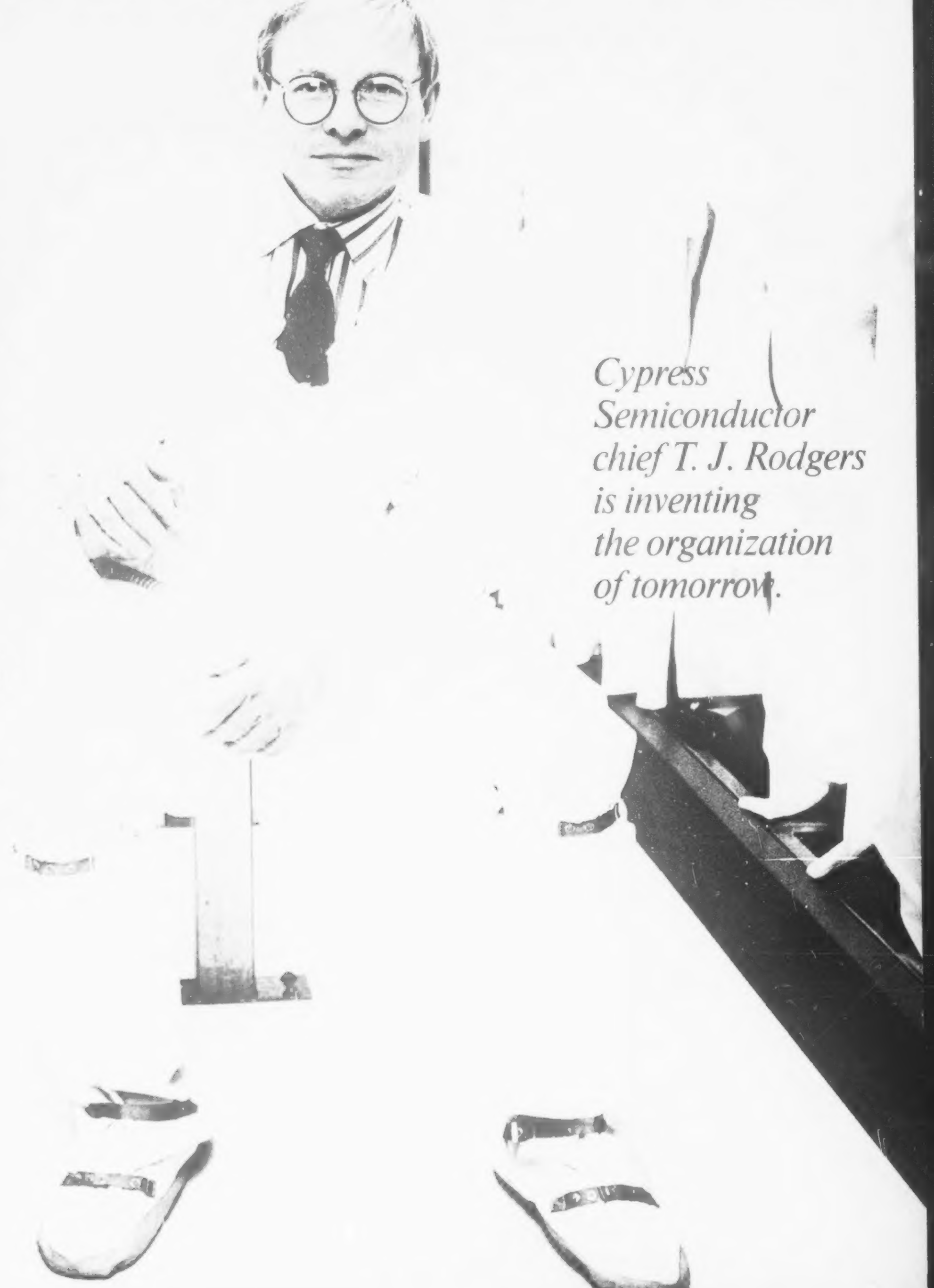
JULY 3, 1989

$3.50

FORTUNE

NEW IDEAS FOR THE '90s

America's Best Business Thinkers Explain the Keys to Future Success



Cypress Semiconductor chief T. J. Rodgers is inventing the organization of tomorrow.

*1056**********5-DIGIT 20814

JULY 3, 1989

FORTUNE

1990s IDEAS

ABOVE: John S. Abbott caught Arthur Andersen consultant Stephen Racioppo for the story on page 48.

COVER: Ed Kashi photographed Cypress Semiconductor CEO T. J. Rodgers.

LOOKING AHEAD/Cover Stories

WHAT THE LEADERS OF TOMORROW SEE 48

These fast-rising business whizzes expect radically decentralized organizations, machines that suggest alternatives, and managers who lead through negotiation rather than rule by authority. *by Brian Dumaine*

STARS OF THE 1980s CAST THEIR LIGHT 66

Vast changes will transform everything from whom you do business with to where you invest. But these veterans of the past decade's upheavals predict good times along with the storms and stress.

WISDOM FROM THE GIANTS OF BUSINESS 78

Members of the National Business Hall of Fame span two centuries and in myriad ways revolutionized aircraft and advertising, farming and finance, soda pop and semiconductors. The practical lessons that can be distilled from their experience are timeless. *by Walter Guzzardi*

A DIRECTORY OF THE LAUREATES 90

From Ben Franklin to Ross Perot, each of these 120 people has fascinatingly changed the face of American commerce.

VOL. 120, NO. 1

"The trick is to address differences without destroying the fabric of your culture."

PAGE 48

"There will be no market for products that everybody likes a little, only products that somebody likes a lot."

PAGE 66

"Total Quality is everything, it's everybody. And it *is* almost like a religion."

PAGE 92

"Michael Milken could solve some of the major financial problems of our lifetime."

PAGE 120

"He gets up and threatens to kill me if I do it again, but I throw the third pitch at his head."

PAGE 130

"It isn't easy being the Scourge of God, but it has its advantages."

PAGE 137

CORPORATE PERFORMANCE

WESTINGHOUSE GETS RESPECT AT LAST 92

The plan was simple enough: Restructure to create value for shareholders and make quality your company religion. But carrying it out took more than a decade. *by Thomas A. Stewart*

A TOOLBOX OF TRICKS FOR DOING THINGS BETTER 96

A TALE DOW JONES WON'T TELL 100

Its most famous product, the *Wall Street Journal*, has hit the skids, surpassed by the electronic information business. That's shaking the company to its shoes. *by Alex Taylor III*

COMPETITION: DOW JONES VS. REUTERS 106

COMPANIES TO WATCH 112

Perkins Family Restaurants, Laclede Steel, Hooper Holmes, Vitalink Communications.

FORTUNE 500/CNN MONEYLINE CEO POLL

READY TO RIDE OUT CHINA'S TURMOIL 117

America's corporate chiefs remain remarkably bullish for the long term. *by Alan Farnham*

MONEY & MARKETS

"I WOKE UP WITH MY STOMACH CHURNING" 120

Drexel CEO Fred Joseph has skinnied down the investment bank and laid off 40% of his employees. He wants to look to the future, but the past won't go away that easily.

HOW TO SUCCEED IN A LOUSY BUSINESS 125

The savings and loan business, that is. A few top operators are doing it. *by John F. Lawrence*

MANAGING

BUSINESS SECRETS OF TOMMY LASORDA 130

The Dodger manager's advice may sound corny, but it works—and that is without a doubt.

DEPARTMENTS

EDITOR'S DESK 4

INDEX 8

NEWS/TRENDS 12

Paramount's big bid for Time Inc., how business is playing its China hand, and more.

PERSONAL INVESTING 29

Simple and sophisticated ways to win from a weaker dollar. *by Sylvia Nasar*

Plus: Waste Management's sweet-scented prospects, stocks for the skittish, and Portfolio Talk with Tokyo stock picker Chris Mitchinson.

LETTERS TO FORTUNE 44

FORTUNE PEOPLE 137

The L.L. Bean of sideboards and sofas, the latest on the Ford cousins, and more. *by Mark Alpert*

ON THE RISE 138

KEEPING UP *by Daniel Seligman* 141

OTHER VOICES 147

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN [illegible]rald M. Levin
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

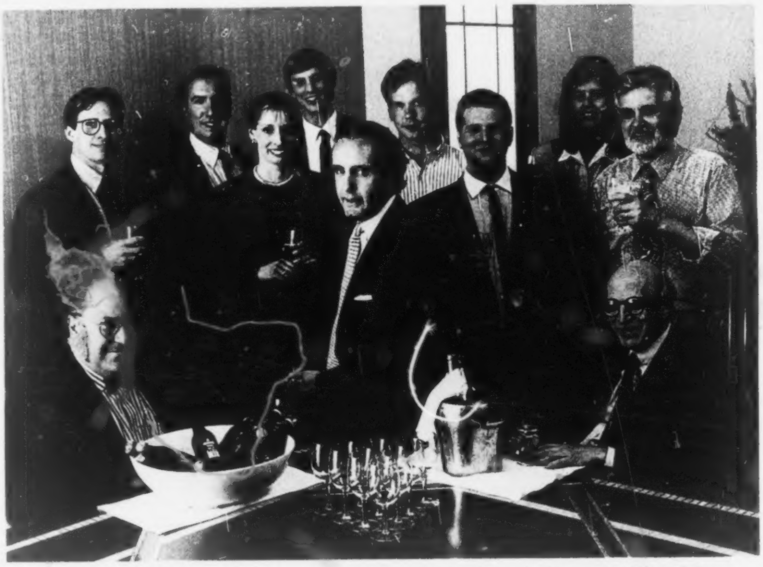
Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, John J. Curran, Marta F. Dorion, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Colin Leinster, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Bill Saporito, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Alan Farnham, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, CA), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Robert E. Norton (Washington), Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Lenore Schiff, Brenton R. Schlender (San Francisco), Patricia Sellers, Andrew Evan Serwer, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Pare, Edward Prewitt, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo), Richard S. Teitelbaum
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Charles J. Attardi, Leslie Brenner, Jonathan Brown, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Scott Keilliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, David V. Rile, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CIRCULATION DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK



Editor Kiechel (center) and his cover-package crew celebrate the end of their labors.

DO YOU THINK you know what it will be like to manage in the 1990s? Think again. The past decade was just a warm-up. The next one, says Louis Gerstner, a former management consultant who now runs giant RJR Nabisco, will be "more competitive perhaps than we've seen in the history of modern economic society." What kind of leaders—with what kind of ideas—will light our way into the years ahead?

To answer those questions, assistant managing editor Walter Kiechel assembled a team of writers, reporters, picture researchers, and designers to produce this issue's 28-page package of cover stories. Their approach was three-pronged: "First," Kiechel says, "we wanted the best thinking of the people—many of them under 40—who will lead the charge in the 1990s. Next we sought wisdom from the battle-hardened veterans of the 1980s. And finally, we distilled the lessons passed down from the laureates in the Business Hall of Fame, stretching back to Benjamin Franklin."

Ideas? You will meet plenty here. In the lead story, writer Brian Dumaine describes how the entrepreneur on our cover, T. J. Rodgers, 41, has learned to keep innovation alive as a company grows bigger. Others talk of new kinds of "learning organizations," model managers who lead "with no apparent authority," and ways of working that blur the distinction between family life and business life. Sparks fly from Myron Magnet's interviews with 11 leaders of the Eighties ("The business community is a major enemy of the kind of society I favor," says Milton Friedman). Walter Guzzardi then draws enduring principles from such homely examples as how Ray Kroc thought about a hamburger.

Magnet sums up the virtue of looking ahead: "You can't foresee the future, but that doesn't make predictions meaningless. The future doesn't just happen. People make it happen. So what they think the future is going to be determines to a significant extent what it is."

Fortune Forecast does not appear in this issue; the 18-month economic outlook will be published in the next issue.

Marshall Loeb
MANAGING EDITOR

[illegible] For subscription queries, call Customer Service at 1-800-541-1000.

FORTUNE 500 / CNN MONEYLINE CEO POLL

READY TO RIDE OUT CHINA'S TURMOIL

The Chinese—and the Russians—are headed toward market economies, say America's top corporate chiefs. Helping them get there will be difficult, but worth it. ■ *by Alan Farnham*

DESPITE the bloodshed that has stained China in recent weeks—and despite continuing political ferment in the Soviet Union—U.S. chief executives view both nations as vast, potentially valuable markets for American goods and services. Moreover, CEOs believe both economies will evolve over the next five years into more open, market-driven systems. This evolution may take longer than previously thought, or may come at the cost of fratricide, they say, but that makes it no less inevitable.

These findings come from the latest FORTUNE 500/CNN Moneyline CEO Poll, conducted by the independent opinion research firm of Clark Martire & Bartolomeo. The respondents, 183 CEOs of FORTUNE Industrial 500 and Service 500 companies, were interviewed between May 30 and June 7. Chinese troops began their crackdown on students in Beijing's Tiananmen Square in the middle of that period, but that scarcely altered the CEOs' outlook for the long term.

"Recent events haven't changed our feelings about the long-run potential of China," says Allen Jacobson, chairman of Minnesota Mining & Manufacturing. "They're certainly a setback. We feel very sad about what has happened, for its effect

One man against the military in Beijing: FORTUNE 500 CEOs are betting that democratic forces in China will ultimately prevail.

Q In light of recent political events in China and the Soviet Union, do you expect these countries to become more attractive markets, less attractive, or not to change?

A

	CHINA		SOVIET UNION
	CEOs surveyed before crackdown	After	
More attractive	55%	53%	89%
Less attractive	5%	17%	—
No change	23%	9%	10%
Not sure	17%	21%	1%

Q Do you expect the Chinese and Soviet economies to be significantly more market oriented or less market oriented five years from now?

A

	CHINA		SOVIET UNION
	CEOs surveyed before crackdown	After	
More market oriented	81%	73%	93%
Less market oriented	2%	4%	—
No change	4%	6%	3%
Not sure	13%	17%	4%

"When you start to make an investment in a country, you're looking for reliability."

WILLIAM J. ALLEY
American Brands

"We feel very sad about what's happened in China. But I'm still optimistic."

ALLEN F. JACOBSON
3M

on the students involved, for how it may slow modernization of the economy, and for how it changes people's perception of doing business there. But we're not changing our plans. I'm still optimistic."

William Esrey, head of United Telecommunications, a long-distance and local phone company, agrees: "The conflict hasn't changed my fundamental thinking. It's a temporary blot that highlights how fragile building new relationships can be." He feels the immediate effect of the unrest will be to diminish U.S. firms' willingness to make deals in China without guarantees up front—a change that would slow development in cash-poor China.

Why are business leaders upbeat? Under the economic reforms of the past decade, China's GNP has been growing more than 10% a year, and some provinces have seen living standards double. For these reasons Sara Lee chief John H. Bryan Jr., like many respondents, feels reform's momentum has grown too powerful to be stopped: "I can't imagine that the administration that brought the reforms this far is going to say, 'Oh hell, let's move back to Maoism.' " He intends to proceed with efforts to establish Sara Lee brands in China, where the company sells cookies, and in Russia, where it sells coffee in luxury shops that accept only hard currency.

American Brands CEO William Alley bases his long-term optimism on the present crisis itself, which he expects to precipitate Chinese government decisions that might ordinarily take years. "Many of us have experienced some degree of holding back as to how far we'd go in doing business with China," he says. "Our hope is this will clear up some of the feeling of uncertainty. When you start to make an investment in a country, you're looking for reliability. There's an element here of their having to sort out their own house."

So much for optimism. In the short term, say CEOs, U.S. firms in China should rig for heavy weather. After the chaotic violence that began June 3, respondents became markedly grimmer about near-term prospects. While a majority still expected China to become a more attractive market eventually, the percentage of CEOs who expected China to become less attractive was more than triple the number who felt that way before the government crackdown. The percentage saying they expected China to become less market oriented in the next year jumped ninefold. And more than half said China's brush with civil war had caused them to adopt a wait-and-see attitude or to put projects on hold.

Charles Hugel, chairman of Combustion Engineering and the U.S.–China Business Council, a group of businessmen, says, "China will sort itself out and get back to where it was before." But in the meantime, he cautions, "companies that require central government approval could have problems short term." Hugel has experience not just with the Chinese but with the Soviets as well, becoming an every-other-month commuter to Moscow to look after an instrument-manufacturing joint venture. Like most poll respondents, he views the situation in the U.S.S.R. as fundamentally different from that in China, where economic reforms have raced ahead of politics. In Russia, Gorbachev has reformed politics without doing much to democratize the economy.

Respondents didn't see China's troubles as rubbing off on the Soviet Union, and 93% believe Russia will become more market oriented in the next five years. How will it get there? The executives said making rubles convertible to dollars would help.

"Companies that require central government approval could have problems short term."

CHARLES E. HUGEL
Combustion Engineering

"Convertibility of the ruble is a subject under much debate in the U.S.S.R.," says Hugel. "There are hundreds of different conversion rates within the Soviet Union. The government has to deal with that problem before it can deal with matching the ruble to the rest of the world."

Esrey of United Telecom wants to see the Soviets shift more resources from the military to the civilian sector. Soviet Premier Nikolai Ryzhkov last month seemed to take a giant stride in that direction when he announced military spending might be cut by as much as a third by 1995 in an effort to spur the domestic economy.

Jack MacAllister, CEO of US West, which is looking into laying fiber-optic cable the length of Russia, feels confident the Soviet government means business. "The Soviets are deadly serious about building a market-based, free economy," he says. "They could have made it very difficult for us, but they've given us all the information we needed. Here are a people who have decided they want to join the world." F

REPORTER ASSOCIATE *Constance A. Gustke*

Q **What changes could the governments of the Soviet Union and China make that would most attract you to do business in these countries?**

A

	CHINA		SOVIET UNION
	CEOs surveyed before crackdown	After	
Reduce bureaucracy	16%	19%	18%
Increase political stability	15%	21%	5%
Make currency convertible	14%	9%	25%
Make government more democratic	13%	9%	–
Increase the society's openness	13%	9%	17%

HOW TO SUCCEED IN A LOUSY BUSINESS

The savings and loan business, that is. If you can make it there, you can make it anywhere. But some patient plodders are doing just that by sticking to their knitting. ■ *by John F. Lawrence*

We're what a savings and loan should be. We take your money and pay you a certain amount of interest on it, and then we reinvest that money in a very good way: We help people buy houses. We do these two simple things that make a savings and loan a savings and loan.

—Commercial for Home Savings

THEY WERE CALLED dinosaurs awaiting the next ice age—savings and loans that acted like the commercial and refused to diversify, to join the new game of risk taking, to force-feed growth the way Charlie Knapp did as CEO at First Charter Financial in California, making it for a time the biggest S&L.

The description was misapplied. The ones that sank into the tar pits were First Charter and hundreds of S&Ls chasing growth by any means. The problem was compounded as state authorities seemingly chartered every S&L that someone politically well-connected wanted to start. Often the founders had little more in mind than amassing cash they could lend to friends. While the new breeds were coming to grief, the patient plodders—the behemoths that did mostly what they always did—became the survivors. Despite growing competition from commercial banks and mortgage companies, they could still dominate the business of making home mortgages in the years ahead.

With federal authorities taking over so many failing institutions, it appears as though this whole industry needs bailing out. S&Ls lost $30 billion in savings deposits in the first quarter, 3% of the industry's total. Higher interest rates are attracting money to other investments, and savers worried about the industry are deserting it. Out of nearly 3,000 institutions, approximately 250 are considered insolvent, and another 1,300 only marginally healthy.

REPORTER ASSOCIATE *J. B. Blank*

Great Western Financial's CEO James Montgomery: "We're in a growth business."

But that leaves about 1,400, including the bulk of the big ones, in solid shape. Some 15% of those have made themselves downright robust in the past few years (see table for five of the strongest) and continue to gain in vigor. How they do it is exemplified in the stories of two large S&Ls, California's Home Savings, which gained a record $807 million in deposits in March, and Great Western Financial, which picked up $200 million that month. They are prime examples of what S&Ls were in the old days—and can be again if Congress and the Bush Administration make the right moves. They turn a profit making loans, holding loans, and servicing loans after they've sold them to other investors. They should be able to survive even full deregulation of banking and head-to-head competition with full-service banks.

Their success attests to an aphorism regaining favor around business schools: Stick to your knitting. The Knapps of the world thought S&Ls could compete in an age of deregulation only by being mostly something else. The sensible S&Ls concentrated on their core business.

HOME, owned by H.F. Ahmanson in Los Angeles, leads the industry with $40 billion in assets; it is second to Great Western in profits. It made $14.9 billion in mortgage loans last year, beating Citibank and Great Western for the top spot. Home and Great Western together account for 7% of

PHOTOGRAPHS BY ALAN D. LEVENSON

the single-family home mortgage market.

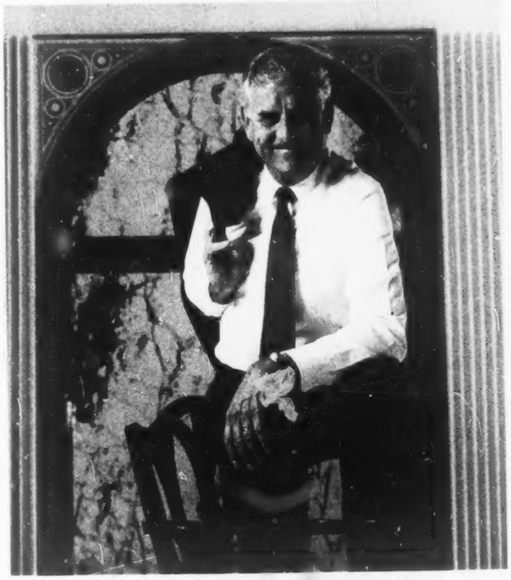
Security analysts applaud these two and a few others for having built such solid balance sheets that they can borrow short-term money more cheaply than some big-name banks. Analysts even recommend their stocks. Says Allan Bortel of Shearson Lehman Hutton: "These two companies are selling at three-quarters of average P/E multiples for the overall market, with better earnings and less risk."

The question now is what uniform U.S. policymakers will permit these strong players to wear—S&L gray or banker pin stripe—and how badly they'll be penalized for staying in the game. Federal Reserve Chairman Alan Greenspan says that S&Ls may have outlived their usefulness. Those with his view believe that commercial banks and mortgage companies can meet the needs of the housing industry and that S&Ls should be folded into banks. These critics think a separately regulated S&L business, with arcane but real tax incentives for making home loans, may be a disastrous anachronism in an age of full-service banking.

The Bush Administration's bailout plan, now moving through Congress, would nonetheless keep a separate S&L industry in existence, making S&Ls pay more than banks for federal insurance. S&L leaders argue that the extra costs penalize sound institutions that are not responsible for the industry's mess. Though the bill would lower the differential over time, there is no assurance that it would produce parity.

WHAT'S INDISPUTABLE is that the strong S&Ls make up a viable business with a loyal corps of customers and an important service to perform. Home and Great Western are only the largest examples. A little further down the list, World Savings, owned by Golden West Financial of Oakland, boasts a compound earnings growth rate of 20% over 20 years. Says Golden West Chairman Herbert Sandler: "What's all the talk that you can't make money lending on residential real estate? That's all we do!" And there are examples near the bottom of the list—hundreds of old, one-community outfits like Workingmens Federal of Bloomington, Indiana, with $130 million in assets. It has been in business since 1885 making mortgage loans strictly close to home. Such S&Ls don't have to get into commercial loans and push other financial services to stay healthy.

Powerhouses like Home and Great Western have built unparalleled retail machines for collecting low-cost deposits and competing for quality home loans. They excel at drumming up business and achieving maximum cost savings from high volume. They've taken advantage of deregulation to extend beyond California—which itself accounts for 17% of U.S. housing starts. Home has loan offices in 19 states and full S&L branches in nine, including New York, where it owns Bowery Savings Bank. Great Western has offices in 20 states, branches in five. Its loan agents, most drawn not from financial backgrounds but from sales-oriented industries like office equipment, compete for quality loans by staying in close touch with real estate agents.



Home's Richard Deihl: Service attracts customers.

Would-be home buyers no longer come hat in hand to the corner S&L hoping to get a loan—the big S&Ls now go out and find *them*. The loan agents make lots of money—many earn $100,000 to $200,000 or more in a good year—and their reputations ride on the quality as well as the quantity of the loans they produce. With efficient underwriting and approval staffs behind them, they can offer real estate agents quick approval and funding when speed is essential to closing a deal. "It's how efficiently you handle a loan that gets you another," says Joe Daher, a 25-year-veteran agent for Home who arranged 260 loans worth $77 million last year.

USING COMPUTERS, the home offices keep watch on loans in process and on the books. Home's loan losses run 0.14% of its portfolio. That's up from 0.06% two years ago, reflecting the problems that have plagued many of the S&Ls that made loans in Texas (and killed lots of Texas-based institutions). But it's far from the 1.13% industry average.

Volume spreads the overhead. Home and Great Western make enough loans not only for their own portfolios but also to sell to investors. In recent years they've developed many new buyers, including pension funds, and now talk of packaging loans in ways that will appeal to foreign investors. Volume also sustains a profitable loan-servicing business. The institutions generally keep the billing and other servicing work on loans they sell, collecting a fractional share of the interest.

The trick on the other side of the business is to lure savings depositors without having to pay premium rates and brokers' fees. One apparent competitive disadvantage for S&Ls, the high cost of maintaining branches, is actually an advantage. Branches mean personal service to customers. And while young people may go for quick, one-stop banking service, they aren't the big savers: Some 65% of S&L deposits come from savers 55 years and older. These folks with nest eggs are willing to spend some time with their money and delight in visiting an S&L branch to do it.

Successful S&Ls offer convenient branch locations and superlative service. Most of the big ones, including Home and Great Western, market most aggressively in California and Florida, with their large retirement populations. Since tellers are the savers' most frequent contact with the S&Ls, both companies pay considerable attention to hiring, motivating, and retaining the people behind the counter—by rotating them into less tedious tasks like opening new accounts, for example.

Home and Great Western hammer consistently on their main marketing theme: service and safety. Great Western used John Wayne as its spokesman, and after his death, Dennis Weaver. Last December it agreed to pay Jerry Buss, owner of the Los Angeles Forum, close to $4 million a year to rename the home of the basketball Lakers and hockey Kings the Great Western Forum.

The strong name recognition pays off. Great Western gets 98% of its deposits directly from savers rather than through brokers, and Home gets 100%. The two even have customers who stubbornly prefer the simplicity of keeping their money in ordinary passbook accounts paying a mere 5% to 5.5% (8% of Home's customers do so, and 5% of Great Western's). The two institutions thus have a tremendous cost advantage over troubled S&Ls, which often get over half their deposits through brokers. Home and Great Western have a long way to go to catch banks in attracting the cheapest source of funds—checking accounts—but those are slowly growing as well.

FIVE LEADERS IN SIZE AND STRENGTH

COMPANY	ASSETS* (millions)	5-YEAR % CHANGE	DEPOSITS* (millions)	5-YEAR % CHANGE	EARNINGS* (millions)	5-YEAR % CHANGE
H.F. Ahmanson	$40,095.7	70.1%	$29,505.5	59.1%	$208.7	340.3%
Great Western	$32,815.2	34.6%	$22,207.1	25.9%	$248.4	194.0%
HomeFed	$17,008.7	93.2%	$12,208.3	82.7%	$111.3	112.0%
Golden West	$16,721.0	59.2%	$10,496.2	40.7%	$138.3	93.4%
Dime Savings Bank	$12,007.2	71.9%	$8,723.3	35.1%	$80.1	**

*For year ended Dec. 31, 1988. **Loss in 1984.

Ranked by assets, the list represents the best of the big publicly traded S&Ls in terms of both growth and overall strength. All have tangible net worth of at least 3.8% of assets.

The S&Ls have solved the problem that almost crippled them in the 1970s by turning heavily to adjustable-rate mortgages. Before deregulation legalized such loans in 1981, the S&Ls were squeezed between what they had to pay depositors as money market rates rose and what they earned on their fixed-rate, 30-year mortgages. Home and Great Western have been among the most aggressive in persuading home buyers to take ARMs.

Home's chairman, Richard Deihl, whose lean and hungry look seems to reflect his former career as a business machines salesman, did it by firing up his sales force—Home's loan agents. A loan agent himself after he left NCR and started with Ahmanson in 1959, he put the troops through a rigorous training program so they could explain the complexities and advantages of the new loans to skeptical borrowers. Then, prepared to give up some growth, he defied competitors that still offered fixed rates and refused to make anything but ARMs.

His agents, backed by strong loan underwriting and processing staffs, built volume from $382 million in the depressed housing market of 1981 to $14.9 billion in 1988. (Deihl reintroduced a fixed-rate loan only last year, confident that his sales force will still get most customers to choose the ARMs.) Nearly 90% of Home's portfolio is in adjustable-rate loans. As a result the company "can just sit and do nothing" and make money, as he puts it, even if rates generally rise and the S&L has to pay more for deposits. Last year Home earned more than $200 million "doing nothing." Says Deihl, who at 60 is already in his third decade as CEO: "It's a nice feeling compared with 1981, when we realized that if we just sat there, we'd be out of business in 17 months."

BORROWERS generally pay a percentage point or so less on ARMs than they would on fixed-rate loans because the ARMs are less risky for the lender. Deihl figures that even with the run-up in rates of the last year or so, most of Home's ARM customers are still paying less than they would have if they had taken out fixed-rate loans in the past few years. Yet Home's spread between cost of funds and return on assets has remained consistently above 2.3 percentage points, vs. 1.9 points for the industry as a whole. Great Western, which has placed similar emphasis on ARMs, has maintained a spread of about three points. Both have succeeded in selling service more than rate. Borrowers usually can find a lower adjustable rate down the street, but not as quickly or reliably.

The two industry giants haven't entirely avoided diversification. A Home customer can find a brokerage service in the branch, for instance, but the institution isn't out to become a serious factor in that business. James Montgomery, 54, a former Price Waterhouse accountant who has headed Great Western since 1979, bought a profitable consumer finance company and began to aggressively push credit cards. But after gearing up to go into commercial lending, he got a look at the first loans offered and scrapped the whole project. Why lend on anything without a nice piece of property as collateral? He also decided against buying troubled S&Ls offered up by regulators, one reason his company is the most profitable.

Montgomery, who bears more than a passing resemblance to his late spokesman and sports a Laker championship ring given him by Buss, says he can expand Great Western's loan volume and other business by 10% to 15% a year while holding expense increases to less than 10%. Says he: "We're in a growth business and our traditional competition [a lot of other S&Ls] is disappearing."

A certain amount of that growth will come from banking—Great Western already calls its branches banks—but Montgomery doesn't pretend the company will be more than a special-purpose bank focused on mortgage lending. "I'm creating better-quality assets than the banks anyway," he says, referring to the flexible returns from the ARMs and the security of lending on homes.

Like most of their strongest competitors, Home and Great Western will get some help from the Bush bailout plan. With a lot of sick S&Ls out of their misery, the strong ones won't be competing for funds by offering the high rates the desperate ones have been forced to pay to struggle along. Those extra costs now keep Home's and Great Western's deposit expenses about a half percentage point above what they would be otherwise. If the two could save even 70% of that, they could increase their earnings by roughly 25%. Less profitable S&Ls would get an even bigger percentage boost. The extra insurance costs will continue to be a handicap. But by clearing away the opportunists in the business, the bailout will go a long way toward letting the survivors—the ones that know how to do those "two simple things that make a savings and loan a savings and loan"—compete on their own merits in the marketplace. F

C8900-1

JULY 17, 1989

$3.50

FORTUNE

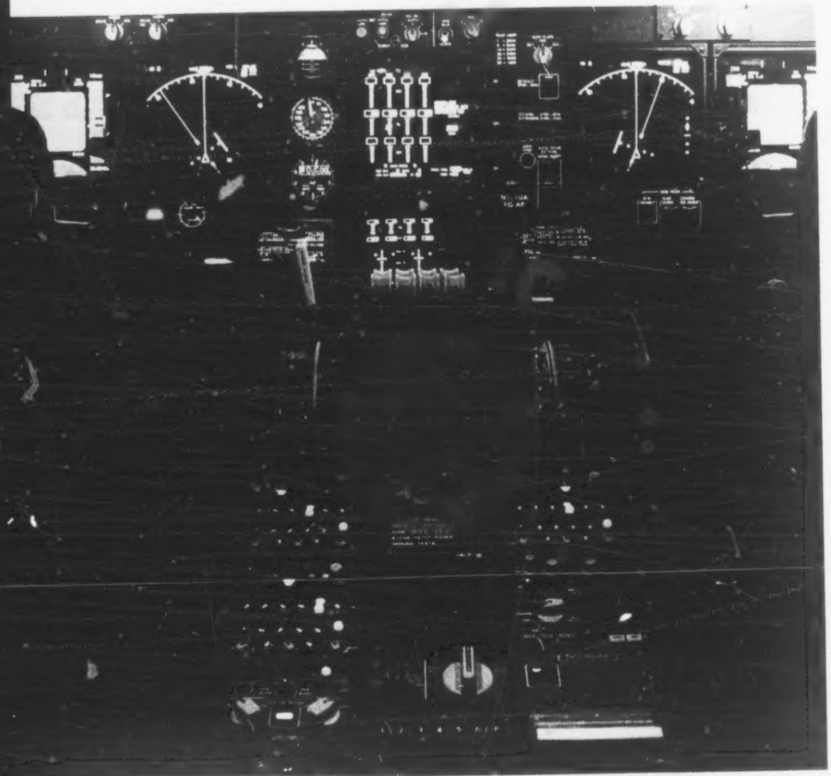
CAN BOEING SURVIVE PROSPERITY?

How CEO [illegible]

724434

JULY 17, 1989

FORTUNE



"By all rights over the next decade or so Boeing will grab more new business than anyone else."
PAGE 40

TRADE

AMERICA'S 50 BIGGEST EXPORTERS 50
Overseas sales took a record leap in 1988. Even some once sluggish industries were among the big gainers. *by Edward Prewitt*

THE ENVIRONMENT

AIR: HOW CLEAN IS CLEAN ENOUGH? 54
Bush wants to put a bigger broom to the skies, but most major pollutants have fallen. How dangerous is all this stuff now? And how fast do we need to move? *by Edmund Faltermayer*

THE ECONOMY/18-Month Forecast

NO RECESSION THIS YEAR OR NEXT 62
FORTUNE's economists expect a soft landing in the months ahead. But even with slow growth, prices will be rising. *by Todd May Jr.*

WHO WILL DO WELL? 67

CAN THIS EXPANSION BREAK THE RECORD? 74
It will soon be the second longest, passing the boom of World War II. To last two more years and pass the 1960s record, slow growth must be the order of the day. *by Andrew Kupfer*

EDUCATION

B-SCHOOLS GET A GLOBAL VISION 78
Students will have to master a foreign language and culture, and the usual material on marketing and finance. Ambitious stuff, but can the schools catch up with business? *by Jeremy Main*

MANAGING/Cover Story

BOEING'S HAPPY, HARROWING TIMES 40
The boom in airplane orders that began in the mid-1980s has gone hypersonic. Nobody stands to profit more than Boeing, the world's No. 1 planemaker, which has dominated the jet age since it introduced the famous 707 back in 1958. But to take advantage of the bonanza, the company must untangle production snarls, do battle with increasingly fierce competition, and decide whether to bet billions on a completely new airliner. *by Anthony Ramirez*

ABOVE: The flight deck of a Boeing 747, photographed by Louis Psihoyos—Matrix.

COVER: Psihoyos shot Chairman Frank Shrontz and a new 747-400 aircraft at Boeing's headquarters in Seattle.

VOL. 120, NO. 2

"The willingness to gamble, whether in product innovation or product introduction, is very important."

PAGE 40

"After two years of window-shopping, women began buying again last fall."

PAGE 67

"Most professors of finance can't hold an intelligent conversation with a vice president of finance."

PAGE 78

"Be ready to deal quietly behind the scenes with him and those he picks for counsel—and for horseshoes."

PAGE 93

"After 21 straight years of sales increases, we learned humility."

PAGE 101

"The fact that her investment is backing glasnost is encouraging."

PAGE 115

POLITICS & POLICY

LET'S LET ASIANS IN 89

As Chinese flee gunshot brutality, Vietnamese escape oppression, and Hong Kong's citizens press to leave before China takes over in 1997, the U.S. faces an uncommon opportunity to enrich its melting pot. *by Kenneth Labich*

A BUSINESS GUIDE TO BUSH COUNTRY 93

Don't expect rigorous ideology or battles with domineering White House staff. Power has been spread around, so try to make friends with his friends. *by Ann Reilly Dowd*

CORPORATE PERFORMANCE

BALDOR'S SUCCESS: MADE IN THE U.S.A. 101

When the motor industry conked out, the company looked foolish for not moving production abroad. Now it's booming—and even exporting to Japan. *by Alan Farnham*

COMPANIES TO WATCH 107

PPG Industries executes some hip strategies, making the old-line glass and paint maker a model of modern management. *by Bill Saporito*

Plus: QVC Network, Cascade, Puritan-Bennett, and Middleby.

THE WORLD

WHAT'S NEXT FOR BUSINESS IN CHINA 110

Though orders are down and new deals are on hold, many Western companies are still banking on doing well in the long term. The best advice is to delay big decisions. *by Ford S. Worthy*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 10

Delaware's chancery court charts corporate futures, how Winston-Salem lured the Japanese, Steve Jobs just says no, and more.

PERSONAL INVESTING 29

Convertible bond funds: the sizzle of stocks, the safety of bonds. *by Ellen Schultz*

Also, Hong Kong's stock market, the new surge in electric utilities, and Portfolio Talk with money manager Ralph Wanger of Acorn Fund.

FORTUNE PEOPLE 115

The Johnson & Johnson heiress puts a Band-Aid on the Polish economy, a General Motors candidate loses an initial, power from pasture patties, a young FORTUNE 500 CEO gets some respect, and more. *by Mark Alpert*

ON THE RISE 116

KEEPING UP 117

Goodbye to Ozzie and Harriet and others like them, great moments in obit writing, and a depraved document on the techniques of fair-employment testing. *by Daniel Seligman*

OTHER VOICES 121

Investment banker M. William Benedetto decries his colleagues' rush to merchant banking.

LETTERS TO FORTUNE 123

Item 15 on dealing with the media, Peter Drucker defended, a case for more airline deregulation, brokers' fees, peer reviews, and more.

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr
S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr
Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS
Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, John J. Curran, Marta F. Dorion, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Colin Leinster, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Bill Saporito, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Maureen F. Allyn, Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Alan Farnham, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, CA), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Robert E. Norton (Washington), Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Lenore Schiff, Brenton R. Schlender (San Francisco), Patricia Sellers, Andrew Evan Serwer, Thomas A. Stewart, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Carrie Gottlieb, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Edward Prewitt, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo), Richard S. Teitelbaum
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Charles J. Attardi, Leslie Brenner, Jonathan Brown, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, David V. Rile, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CONSUMER MARKETING DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudley

EDITOR'S DESK

Ed Faltermayer takes a breather in New York's Central Park.

EDITOR Edmund K. Faltermayer has been digging up dirt on the environment since the early Sixties, when he joined FORTUNE after a career that had taken him to West Germany as a correspondent for the *Wall Street Journal*. Having grown accustomed to the clean streams and neatly manicured parks of Europe, Faltermayer was appalled by the filthy air and garbage-strewn subways he found upon returning to New York City. He gave vent to his outrage in a series of six FORTUNE articles emphasizing the need to clean up the environment. One of them, "We Can Afford Clean Air," was the first in a major business publication to call upon industrial polluters to clean up their act. His series grew into a book, *Redoing America*, published in 1968.

With the passage of the Clean Air Act in 1970, Faltermayer saw his journalistic efforts rewarded. While he downplays the effect his stories had on Capitol Hill, he admits that it was gratifying to help draw attention to such a critical issue. "I called for cleaner air, and it got done," he says. "It was soapbox journalism, in the Time Inc. tradition." Since then, he has remained on his soapbox, writing articles in the Seventies presaging the energy crisis and assessing the benefits of nuclear power, and later editing a number of pieces on the environment, including FORTUNE's recent cover story on the Alaskan oil spill.

Edmund Faltermayer's latest provocative article, "Air: How Clean Is Clean Enough?" appears in this issue on page 54. Breaking from the popular, if apocalyptic, view that air pollution is reaching crisis proportions, Faltermayer raises a tough question: Can the nation afford to spend up to an additional $19 billion a year on cleaner air—as George Bush now proposes to do—when it has so many other serious ills to cure? Americans already spend $34 billion annually to curb pollution, he notes, with the result that air quality has improved significantly over the past ten years.

In search of an answer, Faltermayer interviewed 40 environmentalists, health care researchers, economists, and businessmen, and visited some of the smoggiest cities in the land, from Newark, New Jersey, to Los Angeles. He also spent considerable time analyzing the most serious studies that have been done on the health effects of dirty air.

Faltermayer, who is more sanguine today about the future of the ecosystem than he was in the Sixties and Seventies, does support some acceleration of the cleanup. "Polluted air is not a crisis like crack in the South Bronx, but on the other hand, it *is* the stuff we breathe," he says. "You can avoid going to the South Bronx. You can't avoid breathing." After reading Faltermayer's clearsighted analysis of the problem and his suggestions on what to do about it, you may just breathe a little easier.

Marshall Loeb
MANAGING EDITOR

For subscription queries, call Customer Service at 1-800-541-1000.

MANAGING / COVER STORY

BOEING'S HAPPY, HARROWING TIMES

Swamped with orders, the world's No. 1 planemaker has to unsnarl production, beat back rivals, and decide whether to bet billions on a completely new plane.

■ *by Anthony Ramirez*

A shiny new United 747-400—delivered four months late

AIRLINES the world over are in a shopping frenzy, scrambling to buy enough planes to haul the hordes of customers besieging their gates. In the U.S. deregulation has meant fare cuts that continue to cram virtually every available airliner chockablock with passengers. In Europe the already crowded airways will get busier still after 1992, when barriers to international competition fall. In Asia the powerhouse economies of the Pacific Rim are producing the highest air travel growth rates anywhere. Worldwide, more than a billion passengers clambered aboard commercial airliners last year—and the annual load could nearly double by 2000.

Because of all this demand, the boom in airplane orders that began in the mid-1980s has now gone hypersonic. Bookings totaled nearly 3,200 planes between 1985 and 1988, easily breaking the record set just before jumbo jets arrived in the late 1960s. At Boeing, the industry leader since its famous 707 opened the jet age in 1958, the backlog of orders jumped 70% from 1984 to 1987—and then surged another 70% in 1988 alone. Boeing's orders in the first half of 1989 equal all of last year's. Right now the industry as a whole has a backlog of 3,500. Boeing economists look for airlines to buy more than 8,400 new aircraft worth over $500 billion during the next 15 years.

So far, awesome Boeing has dominated the jet era like a 747 looming over a Piper Cub. The biggest aircraft manufacturer in the world and America's No. 3 exporter (after GM and Ford; see Trade), the company has built more than 60% of the commercial jets now flying. It makes the best-selling small jet, the best-selling medium-size jet, and the only jumbo jet. For customers from American Airlines to Air Zimbabwe, it has orders right now for more than $80 billion in planes—and by all rights over the next decade or so it will grab more new business than anyone else.

CAN BOEING manage this bonanza? Sure, it's a seller's market, but because no single company can meet the exploding demand, the order books of competitors—McDonnell Douglas at home and the Airbus Industrie consortium abroad—are bulging just as bountifully as Boeing's. Airbus in particular is a mounting threat. Its technologically advanced and fuel-efficient product line will soon match Boeing's nose to nose across the tarmac (see chart), and heavy subsidies from the British, French, and West German governments let it grab market share by discounting prices. McDonnell Douglas nearly bankrupted itself in a high-stakes dogfight between its DC-10 and Lockheed's L-1011 that drove Lockheed out of the airliner business in 1984. "Mack Dack," as it's known in the industry, remains hobbled today by a ruthless restructuring and by production problems. But if the company can get its act together, a projected "stretch" version of its MD11 airframe could challenge Boeing's huge 747.

Boeing has internal problems as well. Paradoxically, Airbus has a more experienced work force, thanks to both the European aversion to layoffs and Boeing's own roller-coaster fortunes, which compelled it to unload 20,000 workers—one fifth of its employees—when high oil prices, a recession, and uncertainty about deregulation stalled business in the early 1980s. Boeing's reputation for quality and on-time delivery has suffered in consequence. The newest 747-400 jumbos are now six months behind schedule, the first time in 20 years that the company has been late with deliveries. Other Boeing models have had troubles as well, notably with miswired fire-control systems. Besides a rookie work force, the gremlins include an ambitious production schedule that depended on the pinpoint delivery of parts. In the meantime, Boeing's restive customers tap their feet and fume.

As the biggest planemaker, Boeing is also the most vulnerable to the industry's enormously volatile business cycle, which consists of feast, famine, and a lot of fingernail chewing in between. Airlines tend to buy new planes in blocks, while passenger demand grows only gradually; as in real estate, most of the time there's either too much capacity or too little. Between bursts of orders planemakers can only bide their time, idling factories and much of their work force.

The 747-400's redesigned flight deck is a hit with airlines—and pilots. This "glass cockpit" replaces more than 600 lights, gauges, dials, and switches with nine easy-to-read computer displays and other graphics. The two screens at center, for example, alert the crew to anything abnormal in the aircraft's intricate systems.

REPORTE ASSOCIATE *Alan Deutschman*

To maintain its role as No. 1, Boeing regularly runs another gut-wrenching risk. It's an industry truism that because of the huge capital investment involved, in effect you bet the company every time you bring out a major new design. Boeing has to keep doing just that to stay in front of the competition. The company's production glitches have delayed the launch of a new airframe that Boeing thinks it needs to keep its edge. The 767-X, as it is called, would most likely be a long-range plane, at 350 seats somewhat smaller than most 747s.

Given the order glut, Richard Shevell, a Stanford aeronautics professor and former Douglas Aircraft executive, says that the dilemma for Boeing and its industry is "how to expand to meet this huge production challenge without risking bankruptcy." Observes Frank Shrontz, Boeing's 57-year-old chairman: "Everybody says 'Isn't it great to have such a huge backlog,' and the answer is yes, considering the alternative." But the world economy could weaken badly, leading airlines to cancel their orders. Conversely, if the boom strengthens even more, jetmakers may find themselves snarled in production nightmares, unable to catch up with demand and perhaps losing money because of manufacturing inefficiencies. "The euphoria that goes along with big order announcements makes for an awfully rosy picture," Shrontz says. "But the rosy picture isn't guaranteed."

IN TACKLING the problems of prosperity, Frank Shrontz can call on 27 years of experience at the company, most of it in the commercial airplane business. After graduating from law school at Idaho and business school at Harvard, Shrontz took his first job at Boeing negotiating sales contracts with airlines. In 1973 he left the company's Seattle headquarters for the Pentagon, first as an assistant secretary of the Air Force and then as an assistant secretary of defense. He returned to Boeing in 1977 as vice president for planning and contracts and rose to become general manager of the division that makes the small, mid-range 737.

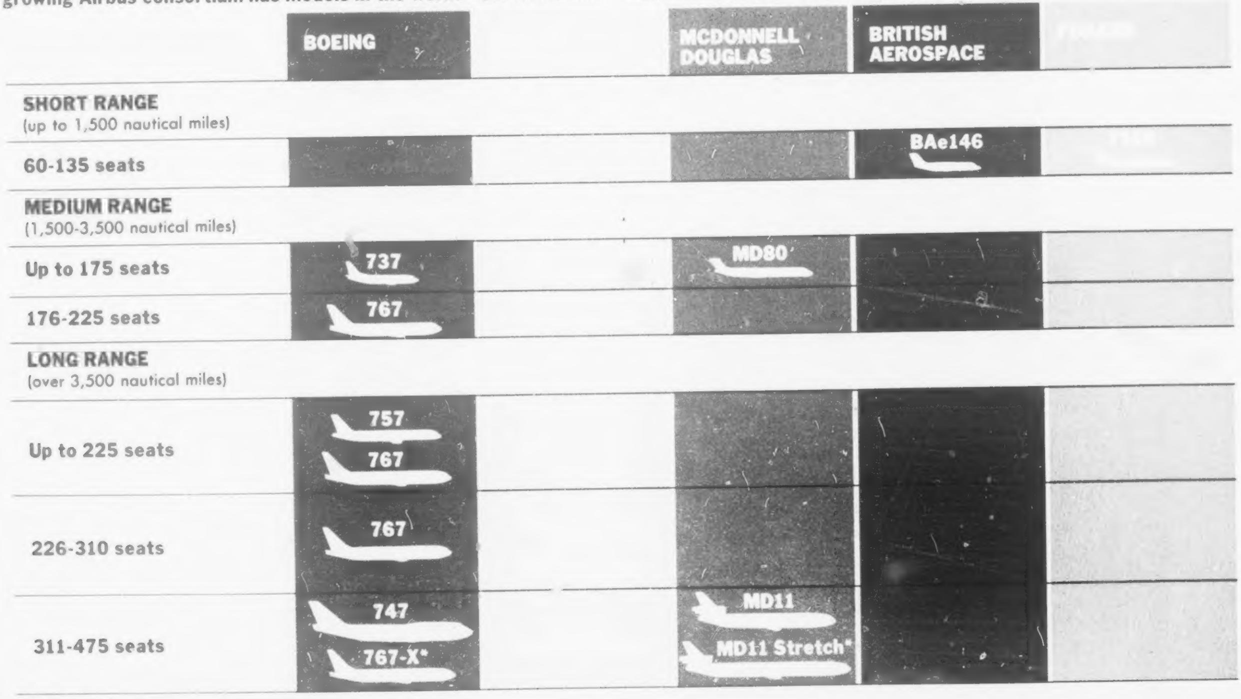
When orders fell and the 737 faced cancellation during the energy crisis of the late 1970s, Shrontz championed his plane over the more fuel-efficient and longer-range 757 and 767. Once oil prices collapsed and deregulation encouraged the short-hop flights the 737 was designed for, it became Boeing's biggest seller. In 1984 Shrontz was rewarded with the presidency of Boeing Commercial Airplane Co. He became president of the whole company in 1985, CEO in 1986, and chairman last year.

It is a measure of Shrontz's ability to get along with his colleagues that none of his rivals for CEO quit. His predecessor, Thornton (known simply as "T") Wilson, was a blunt, shoot-from-the-hip engineer known for such "Wilsonisms" as "He's got us by the ying-yang." Shrontz isn't half as colorful. Almost diffident, he is more likely to favor words like "interface" and depends on wide consultation with other senior officers. Says Dean Thornton, Shrontz's successor as president of the commercial airplane company: "Frank's just a quiet kid from Idaho. But for some reason when he's around, a problem gets solved and nobody quite knows how." Irving Shapiro, retired chairman of Du Pont and a former Boeing director, once described Shrontz as hardly "the movie image of a CEO," but "all business and tough-minded."

To deal with the problems created by in-

AN INCREASINGLY SCRAPPY AIRBUS PREPARES TO GO NOSE TO NOSE WITH BOEING

Nobody yet matches Boeing's fleet across the board, but Europe's growing Airbus consortium has models in the works—the A330 and A340—or on the drawing boards that could do just that by the early 1990s. The three other companies are essentially niche players.



*Projected.

experienced workers and an overambitious production schedule. Shrontz and his colleagues have devised both short-term and long-term strategies. In the long run, Boeing executives figure time is on their side. They will raise production rates steadily but gingerly in order to give workers a chance to learn their jobs and do them better. Says Philip Condit, executive vice president of the commercial airplane division: "We just want people to settle down."

In the short run, Boeing has imported experienced workers from Lockheed and from other Boeing divisions to meet contractual obligations to deliver 57 of its 747s this year. At the plant in Everett, Washington, where Boeing assembles the planes, nearly 60% of the workers have less than two years' experience. Condit admits that Boeing tried to do too much too fast, with too few seasoned workers. First, the new model extended the range of the standard 747 from about 6,000 miles to nearly 8,000 miles. That required slightly more powerful engines. To maximize the choices available to customers, the company decided to offer engines from all three major manufacturers, Pratt & Whitney, General Electric, and Rolls-Royce. Getting one engine certified by the Federal Aviation Administration, let alone three, is time consuming, and it was not until June 8 that Boeing won the go-ahead for all the power plants.

The flight deck of the 747-400 is different as well, incorporating the latest avionics in a "glass cockpit" that replaces more than 600 lights, dials, gauges, and switches with easy-to-read computer screens and other graphics. The change allows airlines to use two people in the cockpit instead of three, reducing labor costs, but it required miles of rewiring.

BOEING WAS scheduled to deliver six of the advanced planes by March 1989, but at that point it had turned over only one. The situation got so desperate that Boeing contracted with Lockheed's Georgia operation to "borrow"—at premium pay and generous housing allowances—670 skilled workers averaging ten years of experience who had been laid off when production of the Air Force's C-5B heavy cargo plane ended. Boeing also brought in several hundred people from its military airplane division in Wichita, Kansas, and its helicopter division in Philadelphia.

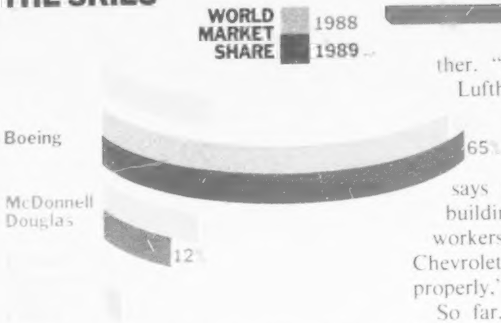
Many of the plane's nearly 3,000 subcontractors were running into snags too. "People have the erroneous view that the whole problem is in the Boeing assembly line, and it's not," insists Dean Thornton. "We buy half of the plane." Boeing assumed that suppliers that performed well in the past would do so again. For example, Jamco, a Japanese manufacturer of lavatories, was critically behind schedule. The lavatories have to go in before the seats, and if the lavatories are late, the plane is late.

The lavatories are a good illustration of what makes building a jetliner so complicated. A 747 has 17 of them, and different configurations mean changes in plumbing, wiring, and floor beams. Since most of Boeing's first 18 customers were foreign airlines that wanted the new 747 as their flagship, each demanded a custom cabin configuration, which slowed work even further. "Northwest, Singapore Airlines, Lufthansa, KLM, British Airways, Cathay Pacific, Korean Air, JAL, Malaysian Airlines, United Airlines—these are big guys," says Condit. Boeing was, in effect, building one-of-a-kind Bentleys with workers who barely knew how to build a Chevrolet. "We didn't marshal our people properly," Thornton concedes.

So far, customers seem satisfied with Boeing's rate of reform. Shrontz has had to spend much time on the road, mollifying angry airline executives who won't have their flagship planes for the peak summer season. What can he say? "I'm honestly telling them how much we regret the delays." Keith Wilkins, planning director for British Airways, one of Boeing's biggest critics on quality control, is satisfied for now: "Boeing has very, very, very big problems, but we believe them when they say they are in the process of correcting them." Says a spokesman for Japan Air Lines, another persistent critic: "We have confidence in them." In June Lufthansa, once skeptical, converted three options for 747-400s into firm orders worth $375 million.

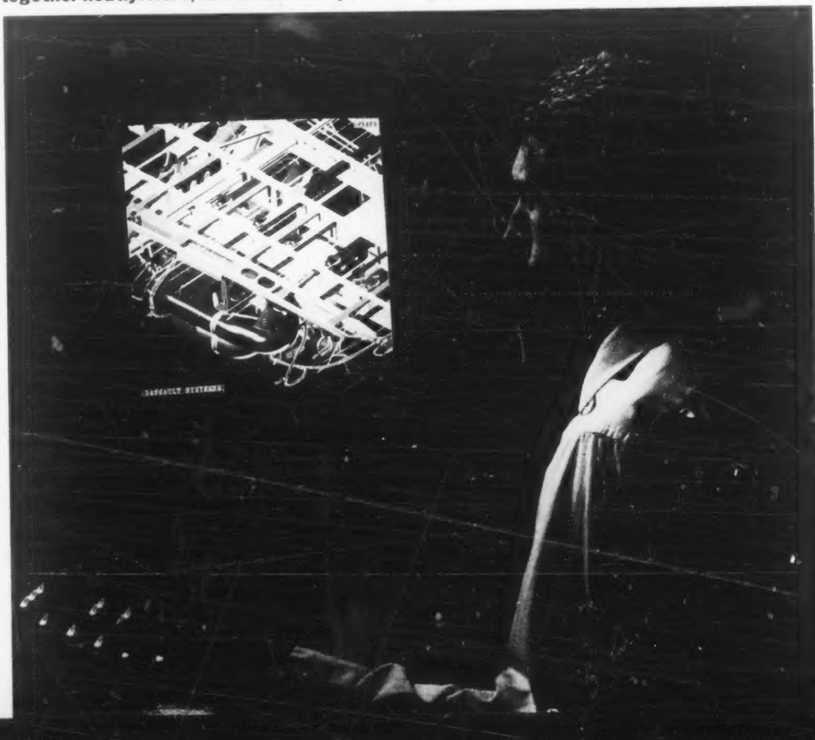
Boeing plans to raise production rates over the next year from about 30 planes of all types per month to 34. Shrontz will watch the 747 line like a nervous mother.

BOEING DOMINATES THE SKIES



*Percent of total dollar value of delivered commercial airliners.
SOURCE: DEAN WITTER REYNOLDS

Computer-aided design allows Boeing engineers to make sure that complex systems fit together neatly. Here, Eric Essman helps reconfigure the aft section of a twin-jet 757.



Having turned over only nine of the craft in the first half, Boeing must deliver a staggering 48 planes in the remaining six months to fulfill its contracts. If that means postponing the 767-X, so be it. "What I don't want is to have management attention and resources we need to get the 747-400 job done diverted to a new airplane," says Shrontz. "I want to have some comfort that we're going to get darned close to 57."

Boeing's problems have not been confined to the 747. The FAA found 95 cases of misconnected wiring and plumbing in systems used to detect and put out fires in all versions of Boeing jets—737s, 757s, and 767s, as well as 747s. Japan Air Lines and British Airways were furious with the flaws and wrote Shrontz blistering letters. Boeing corrected all 95 cases, and redesigned the fire-control systems to make the confusing tangles of wires easier to assemble properly.

None of this has helped Boeing's profit margins, which in a brutally price-competitive industry are as frail as a paper airplane. Last year Boeing had earnings of $614 million on revenues of $17 billion; ten years ago it earned nearly as much—$505 million—on less than half the sales ($8.1 billion). Two-thirds of its revenues and 70% of its profits come from building commercial airliners. Shrontz can look for little help from his defense and space-related businesses. Last year the military airplanes division lost $95 million. The V-22 Osprey under joint development with Textron's Bell subsidiary, a vertical takeoff and landing aircraft that flies like a plane and lands like a helicopter, could be worth $26 billion in orders from the Marine Corps—but Congress is likely to cancel it.

FOR ALL ITS recent difficulties, no one argues that Boeing doesn't know how to make an airplane. Founded by a wealthy timberman's son who liked to fish near Seattle, Boeing honed its prowess during World War II with the renowned B-17 Flying Fortress and the B-29 Superfortress, the biggest bomber of its time. In 1952 Boeing bet the company by boldly gambling $16 million—most of its net worth—on a prototype passenger jet, when the market was dominated by Douglas Aircraft's propeller-driven DC ("Douglas Commercial") series. The resulting Boeing 707 made propeller planes obsolete.

Boeing excels in product support. To advise its customers, the company stations a network of 198 field representatives in 109 cities in 55 countries. At seven major parts centers in such capitals as Brussels and Singapore, Boeing keeps 15 million spare parts in inventory. On average, it ships one part every 45 seconds. Airbus and McDonnell Douglas can't match that coverage.

If a plane crashes but can be repaired, Boeing dispatches a crack team of "aircraft on the ground" engineers to fix it. Once called "Reagan's Raiders" after the late Robert Reagan, who organized the group in 1960, the 80-man division has worked on everything from a 737 riddled by bullets in the Yom Kippur War to an Air France cargo 747 that gave "Delhi belly" a new meaning after an aborted takeoff sheared off its wheels in the Indian capital last year. Work on rebuilding the Air France plane began in May; over four months, Boeing will custom-make huge replacement fuselage sections, put them on ships to India, and then truck them inland to New Delhi, where it has set up a minifactory under a gigantic white tent. The 100-degree-plus heat is so intense that Boeing engineers can work on the wings only at night because they expand so much during the day.

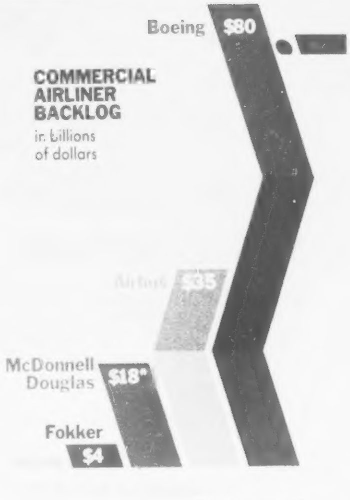
Boeing's chief competitor, Airbus, sold few planes before the early 1980s. Its production was small but stable. With the current boom, it can afford to step up production from 61 planes last year to 108 in 1989. Its backlog now totals an impressive $35 billion. Airbus is heavily inoculated by subsidies against the industry's feast-or-famine disease. The U.S. Commerce Department estimates that European governments provided one-fourth of Airbus Industrie's cash flow of $35 billion to $40 billion between 1974 and 1987. Airbus doesn't discuss its numbers but predicts profitability by 1995—something Commerce says is highly unlikely.

AIRBUS'S PRODUCT line is wide and attractive. The company currently builds three medium- to long-range planes that carry 150 to 267 passengers. Airbus has adopted "fly-by-wire," a computerized steering system that is lighter, faster, and easier to use than decades-old stick-and-rudder hydraulics. In the early 1990s Airbus plans to introduce two larger planes, the four-engine, 295-passenger A340 at $95 million and the twin-engine, 335-passenger A330 at $89.5 million. The A330 will compete directly with Boeing's 767-X and will probably beat it to the marketplace by two years.

In April the European governments that back Airbus forced a little-noticed reorganization that may indicate a new reluctance to dig much further into their deep pockets: They cut the unwieldy Airbus supervisory board from 17 members to five and created the post of financial director, suggesting a strong desire for a tighter rein on costs.

A much more turbulent reorganization is under way at McDonnell Douglas, where the No. 3 planemaker is trying to reduce nine layers of management to five. In the process, 4,000 executives will be pared to 2,700. One of the more demoralizing aspects of the reorganization: a requirement that executives "apply" again for their jobs. The parent company in St. Louis used the shock therapy on the aircraft company in Long Beach, California, because of severe production delays. In February planes were

A SONIC BOOM IN ORDERS



*Fortune estimate

Thornton: "We were late. It's our fault."

averaging 304 "open items"—jobs not completed when they should have been. In June the count was still about 100.

Mack Dack shocked Wall Street with a $66 million operating loss on its commercial aircraft operations in the first quarter. The company made 120 planes last year, but it will be hard pressed to turn out the same number in 1989. John Wolf, vice president and general manager of the MD-80 program, is well aware that McDonnell took over Douglas in 1967 when the airliner company was unable to handle a huge order backlog. "We want to avoid a similar situation today," says Wolf.

Frustrated by the disastrous competition with Lockheed, McDonnell hasn't financed an all-new plane since it acquired Douglas: The MD80 is a retooled DC-9, the MD11 a revamped DC-10. McDonnell Douglas has successfully exploited price to keep Boeing on its toes. The MD80, rival of the $31 million 737, goes for $25 million. The $100 million MD11 competes with some models of the 747, at $120 million or so.

INVESTOR'S SNAPSHOT

BOEING

SALES (latest four quarters)	**$17.3 BILLION**
CHANGE FROM YEAR EARLIER	UP 14.1%
NET PROFIT	**$639.0 MILLION**
CHANGE	UP 28.3%
RETURN ON COMMON STOCKHOLDERS' EQUITY	**11.6%**
FIVE-YEAR AVERAGE	13.8%
STOCK PRICE RANGE (last 12 months)	**$36.00–$55.75**
RECENT SHARE PRICE	**$50.25**
PRICE/EARNINGS MULTIPLE	**18**
TOTAL RETURN TO INVESTORS (12 months to 6/16)	**42.4%**

With McDonnell Douglas still weak and Airbus still losing money, Boeing enjoys tremendous advantages. If it launches the 767-X, as seems likely, it will have a plane that it can successfully market in the mid-1990s, when Boeing economists predict a shift in airline demand to much bigger planes. Half the dollar value of aircraft delivered after 1995 may be for planes with more than 350 seats. If airports around the country and the world are helplessly snarled, that may also mean a boom in production of the 747, which can carry nearly 500 passengers, or perhaps a derivative with 100 or more added seats.

Boeing doesn't lack for money. It has about $4 billion in cash and little debt. Jerry Cantwell, an analyst at the Wertheim Schroder brokerage firm, expects price increases of 7% annually on delivered aircraft between 1988 and 1991. As novice workers learn their jobs, he says, profitability on the 747-400 should rise dramatically.

The world's biggest plane factory, in Everett, Washington, can turn out four 747s a month.

All that cash will come in handy as the 767-X tests Boeing's limits once again. The plane will probably cost around $2.5 billion to develop. Two versions are possible: A "stretch" 767 would be only about 25% new. A second ("the solution we favor," says Thornton, the commercial airplanes president) would be nearly all new, with only a nose section and a few other parts shared with the 767. This version would be a 350-seat plane, with a range of up to 6,000 miles. While airlines will want large planes, they don't want to risk flying half-full 747s. The 767-Xs would be ideal for long, thinly traveled routes like Raleigh-Durham to London's Gatwick airport. Security analysts say likely launch customers are United Airlines and All Nippon Airways of Japan.

The fact that it figures to be an all-new plane makes Wall Street nervous. On June 5, Boeing stock dropped nearly $3.50 a share on the false rumor that Boeing would announce the launch of the 767-X at the Paris air show later in the week. It recovered somewhat two days later, to $77.50. (That's equivalent to $52 after a three-for-two stock split June 9.) Cantwell probably contributed to the June 5 drop by changing his opinion of Boeing stock from "buy" to "neutral." But he changed his mind not because of the 767-X but because he believed Boeing shares were fully priced and would turn down as orders leveled off. "The 767-X is not a negative at all," says Cantwell. "It's a good business decision."

FRANK SHRONTZ is prepared for a high-risk future. "You don't succeed in this business by being cautious," he says. "If you don't want to play the game, maybe you ought to go do something else. I don't want to lose that can-do attitude. The willingness to gamble, whether in product innovation or product introduction, is very important. The worst thing for us is to overreact and get so conservative that we try to live off our past accomplishments. Our willingness to look at the 767-X is evidence that we won't do that."

For Shrontz, Douglas Aircraft is an object lesson: "We don't want to get into the position they were in at the beginning of the jet age, when they were complacent about their product line and didn't innovate. They were unwilling to take the risk that somebody else did." That someone else, of course, was Boeing.

AMERICA'S 50 BIGGEST EXPORTERS

Overseas sales took a record leap in 1988. Compaq Computer had the biggest increase—over 100%. Some once sluggish industries chipped in with big gains too.

■ *by Edward Prewitt*

WHAT A YEAR for exporters! Led by huge individual increases, overseas sales of America's top 50 soared 22% last year, to nearly $97 billion—by far the biggest jump since FORTUNE began compiling the annual ranking in 1980. Fast-growing Compaq Computer, one of seven new companies on the list, led the gainers with a rise of 102%. Companies fell from the list not because their exports decreased—they didn't—but because they failed to grow fast enough. Cummins Engine, No. 43 last year, pushed overseas sales up 17%, to nearly $500 million. Not good enough to make this year's ranking.

General Motors held its customary lead despite a weak 7.6% increase. No. 2 Ford Motor narrowed the gap with slippery-shaped models that are popular in Europe. Ford's exports rose twice as fast as GM's; another year like that and GM will slip from the top spot for the first time since 1982. Much of both companies' trade doesn't go far—they ship body parts and chassis to assembly plants in Canada, which send most of the cars back to the U.S. (To calculate total exports, FORTUNE counts both direct sales to foreign customers and intercompany transfers to non-U.S. operations.)

REPORTER ASSOCIATE *Rosalind Klein Berlin*

Chrysler, which sold its European operations in the 1970s to raise cash, opened export offices in five European countries last year. With consumers clamoring for minivans and Jeep Cherokees, shipments were up 42%.

Boeing stands out as the most export-oriented of the bunch. Nearly half its sales came from abroad last year, and close to two-thirds may this year. Foreign air travel has been surging. By mid-June, Boeing had already delivered 86 aircraft to foreign buyers; only 46 jets went to domestic companies. McDonnell Douglas's 7% increase in exports last year was anemic in comparison with Boeing's. The company blames a dip in orders of the F-18 jet fighter. Exports of commercial aircraft rose 54%.

In a year of strong performances, chemicals did best, with fully a fourth of the companies on FORTUNE's list in that business. Among them, Ethyl (No. 49) was the champ in export growth. The company credited higher prices for most products and an increased sales force in the Far East. Bromine, introduced in Asia recently as a flame retardant, sold particularly well there, as did plastic films. Europe also proved a fertile market. Export sales jumped 48%.

The most notable new entries were pharmaceutical makers Abbott Laboratories, Baxter International, and Bayer USA (subsidiary of Bayer AG of West Germany). Their presence reflects the industry's growing international clout, mainly because of lower prices due to the weaker dollar. Only two years ago Merck was the first drug company ever to make the top 50. Aluminum Co. of America (No. 43) returned to the list after a two-year absence. The price of aluminum shot up as worldwide inventories hit their lowest level in a decade. The relatively weak dollar made U.S. smelters the low-cost producers. Alcoa's foreign sales of aluminum ingot and finished and semifinished products increased 75%.

The top U.S. exporters see an even better year in 1989. Foreign competitors, with their stress on market share, still hang tough. But the Americans are relying on increased efficiency from retooled plants and help from a dollar that, despite its recent rebound, remains 33% below its 1985 peak. With the trade deficit still running $105 billion annually, America needs another year that's even better than the last one. ■

PAUL LOWE—NETWORK

Parts from the U.S. flowing into this assembly plant in Scotland boosted Compaq's exports.

RANK		COMPANY	PRODUCTS	EXPORT SALES		TOTAL SALES		EXPORTS AS PERCENT OF SALES	
1988	1987			$ Millions	Percent change 1987-88	$ Millions	Fortune 500 Rank	Percent	Rank
1	1	**GENERAL MOTORS** Detroit	Motor vehicles and parts	9,392.0	7.6	121,085.4	1	7.8	41
2	2	**FORD MOTOR** Dearborn, Mich.	Motor vehicles and parts	8,822.0	15.9	92,445.6	2	9.5	35
3	3	**BOEING** Seattle	Commercial and military aircraft	7,849.0	24.9	16,962.0	19	46.3	1
4	4	**GENERAL ELECTRIC** Fairfield, Conn.	Jet engines, generators, medical systems	5,744.0	19.0	49,414.0	5	11.6	29
5	5	**INT'L BUSINESS MACHINES** Armonk, N.Y.	Computers and related equipment	4,951.0	24.0	59,681.0	4	8.3	39
6	8	**CHRYSLER** Highland Park, Mich.	Motor vehicles and parts	4,343.9	42.3	35,472.7	7	12.2	28
7	6	**E.I. DU PONT DE NEMOURS** Wilmington, Del.	Specialty chemicals, energy products	4,196.0	19.0	32,514.0	9	12.9	26
8	7	**MCDONNELL DOUGLAS** St. Louis	Commercial and military aircraft	3,471.0	7.0	15,072.0	25	23.0	5
9	10	**CATERPILLAR** Peoria, Ill.	Heavy machinery, engines, turbines	2,930.0	33.8	10,435.0	35	28.1	4
10	11	**UNITED TECHNOLOGIES** Hartford	Jet engines, helicopters, cooling equipment	2,848.1	37.5	18,087.8	16	15.8	20
11	9	**EASTMAN KODAK** Rochester, N.Y.	Imaging equipment and supplies	2,301.0	26.0	17,034.0	18	13.5	24
12	12	**DIGITAL EQUIPMENT** Maynard, Mass.	Computers and related equipment	2,083.0	6.2	11,475.4	30	18.2	11
13	14	**HEWLETT-PACKARD** Palo Alto, Calif.	Computers, electronics	2,064.0	29.3	9,831.0	39	21.0	7
14	18	**UNISYS** Blue Bell, Pa.	Computers and related equipment	2,012.9	68.0	9,902.0	38	20.3	8
15	13	**PHILIP MORRIS** New York	Tobacco, beverages, food	1,863.0	9.6	25,860.0	10	7.2	43
16	17	**MOTOROLA** Schaumburg, Ill.	Radio equipment, semiconductors	1,742.0	33.7	8,250.0	52	21.1	6
17	16	**OCCIDENTAL PETROLEUM** Los Angeles	Agricultural products, coal	1,684.0	28.0	19,417.0	14	8.7	37
18	20	**GENERAL DYNAMICS** St. Louis	Tanks, aircraft, missiles, gun systems	1,597.1	0.7	9,551.0	41	16.7	13
19	15	**ALLIED-SIGNAL** Morristown, N.J.	Aircraft and vehicle parts, chemicals	1,464.0	3.4	11,909.0	29	12.3	27
20	19	**WEYERHAEUSER** Tacoma	Wood, pulp, paper, logs, lumber	1,398.0	20.6	10,004.2	37	14.0	23
21	23	**UNION CARBIDE** Danbury, Conn.	Chemicals, plastics	1,388.0	30.4	8,324.0	50	16.7	14
22	24	**RAYTHEON** Lexington, Mass.	Electronic weaponry, aircraft	1,307.0	24.8	8,192.1	53	16.0	18
23	27	**TEXTRON** Providence	Aerospace, consumer goods	1,127.0	26.5	7,111.2	61	15.8	19
24	22	**WESTINGHOUSE ELECTRIC** Pittsburgh	Air traffic and weapons electronics	1,115.0	1.7	12,499.5	27	8.9	36
25	26	**DOW CHEMICAL** Midland, Mich.	Chemicals, plastics, polymer products	1,109.0	13.4	16,682.0	21	6.6	44
26	25	**ARCHER DANIELS MIDLAND** Decatur, Ill.	Protein meals, vegetable oils, flour	1,087.7	10.8	6,798.4	65	16.0	17
27	28	**MONSANTO** St. Louis	Herbicides, chemicals, pharmaceuticals	1,083.0	22.1	8,293.0	51	13.1	25
28	29	**INTERNATIONAL PAPER** Purchase, N.Y.	Pulp, paper, wood products	1,000.0	28.7	9,533.0	42	10.5	33
29	32	**HOECHST CELANESE** Somerville, N.J.	Chemicals, plastics, fibers	967.0	43.9	5,679.0	78	17.0	12
30	21	**EXXON** New York	Petroleum, chemicals	937.0	(17.0)	79,557.0	3	1.2	50
31	35	**INTEL** Santa Clara, Calif.	Microcomputer components	925.6	72.2	2,874.8	150	32.2	2
32	31	**MINNESOTA MINING & MFG.** St. Paul	Industrial, electronic, and health goods	836.0	24.2	10,581.0	34	7.9	40
33	•	**BAYER USA** Pittsburgh	Health goods, chemicals, photographics	700.0	16.7	4,718.5	99	14.8	21
34	41	**LOCKHEED** Calabasas, Calif.	Aircraft, electronics, information systems	686.0	21.6	10,667.0	33	6.4	45
35	44	**PHILLIPS PETROLEUM** Bartlesville, Okla.	Liquefied natural gas, chemicals, plastics	675.0	21.6	11,304.0	31	6.0	47
36	•	**WARNER COMMUNICATIONS** New York	Video production, videocassettes	673.5	15.6	4,206.1	109	16.0	16
37	33	**FMC** Chicago	Armored cars, electronics, chemicals	647.3	5.6	3,286.9	136	19.7	10
38	47	**DEERE** Moline, Ill.	Farm and industrial equipment	622.0	61.6	5,364.8	87	11.6	30
39	36	**ROCKWELL INT'L** El Segundo, Calif.	Electronics, automotive parts	620.0	23.3	11,946.3	28	5.2	48
40	37	**MERCK** Rahway, N.J.	Drugs, specialty chemicals	619.4	25.9	5,939.5	74	10.4	34
41	•	**COMPAQ COMPUTER** Houston	Computers and related equipment	611.7	101.9	2,065.6	202	29.6	3
42	34	**HONEYWELL** Minneapolis	Control and flight systems	610.0	5.0	7,148.3	60	8.5	38
43	•	**ALUMINUM CO. OF AMERICA** Pittsburgh	Aluminum products	590.6	75.1	9,795.3	40	6.0	46
44	•	**NORTH AMERICAN PHILIPS** New York	Electronics, televisions, lighting	588.1	26.4	5,423.5	84	10.8	32
45	39	**DRESSER INDUSTRIES** Dallas	Oil, coal, and gas equipment	584.6	23.0	3,941.7	118	14.8	22
46	38	**AMOCO** Chicago	Chemicals	578.0	17.5	21,150.0	12	2.7	49
47	48	**COMBUSTION ENGINEERING** Stamford, Conn.	Industrial control systems, generators	560.0	46.0	3,483.9	131	16.1	15
48	•	**ABBOTT LABORATORIES** Abbott Park, Ill.	Drugs, diagnostic equipment	547.0	36.1	4,937.0	94	11.1	31
49	49	**ETHYL** Richmond	Specialty and petroleum chemicals	542.7	47.6	2,718.0	158	20.0	9
50	•	**BAXTER INTERNATIONAL** Deerfield, Ill.	Health goods	521.0	44.3	6,861.0	64	7.6	42
		TOTALS		96,615.3		885,485.4			

LETTERS TO FORTUNE

DEALING WITH THE MEDIA

Seems to me another item needs to be added to the "Fourteen Ways to Deal With the Press" ("Smart Ways to Handle the Press," June 19): Know how to say what you want to say. Otherwise CEOs should take the advice of *60 Minutes'* Don Hewitt and stick to watching TV, not appearing on it.

I recently completed a nationwide survey of chief executives and found that most CEOs are not very good at public speaking. In fact, 89% said that the ability to speak effectively was very important, but only 6% claimed to be really good at it.

FRED BERGENDORFF
Professor
College of Professional Studies and Fine Arts
San Diego State University

Your advice to cage your lawyers miscasts the essence of an important point and maligns the lawyer's role. Better advice would have been: Weigh the communications risks yourself. Though legal advice is appropriate for the evaluation of legal risks in PR, it is the executive's role to weigh those risks against other factors. Advice from counsel tends to be conservative, but it does not "always" recommend silence as your article glibly asserts.

RALPH D. DAVIS
Lecturer in marketing and law
Illinois Institute of Technology
Chicago

The article brought back fond memories of some valuable guidance that an Air Force four-star general used to give in "Rules of Survival for Senior Staff Officers":

Rule 1. Proofread every staff paper you author as though your document is going to appear on the front page of the Washington *Post*.

Rule 2. Read the Washington *Post*.

PAUL BROWN
Colonel, USAF, Retired
Manager, Govt. Contracts, Miller Fluid Power
Bensenville, Illinois

Reporters make errors, but the words "I'm sorry" or "We made a bad mistake" seem to be missing from the standard vocabulary at schools of journalism.

MAURICE B. HICKEY
Spokane

RESTORING THE INCENTIVE

In "Seeking the Sense in CEO Pay" (June 5), Graef S. Crystal questioned the wisdom of Northrop's board adjusting the stock options price for CEO Thomas V. Jones. Options were granted to Jones and 13 other senior executives as incentive for them to remain with the company beyond their normal retirement age at a particularly important period. By recognizing that the options had lost their incentive value and reissuing them at current values, we were able to put them to work once again in the long-term interest of our customers and shareholders.

The cycle time from investment to return on aerospace programs initiated by the government is often five to ten years; for a company-originated development it can be ten to 15 years, and if the underlying research and experimentation are included, the period frequently exceeds 25 years. While salary and incentive compensation are essentially tied to the executive marketplace and the achievement of specified annual objectives, realistic stock options help to span that lengthy period.

RICHARD E. HORNER
Chairman, Compensation Committee
Board of Directors, Northrop Corp.
Lake San Marcos, California

LUC NOVOVITCH—GAMMA/LIAISON

"Most CEOs are not very good at public speaking. In fact, only 6% claimed to be really good at it."

SAME TEETH, DIFFERENT HAIRDO

It's true but incomplete to say that marketers target teens and younger consumers for predictable sales growth ("The ABC's of Marketing to Kids," May 8). As you cited, 62% of college students buy the same brand of toothpaste they used in high school. The story is different, however, in other products: For example, 66% switched brands of shampoo.

CHIP UNDERHILL
Director, Corporate Communications
MarketSource Corp.
Cranbury, New Jersey

DEFENDING DRUCKER

It is Paul Johnson's review of Peter Drucker's *The New Realities* (Books & Ideas, June 19) that misses the mark, not Drucker. For decades Drucker has been the world's foremost observer of management. His writings are designed to make us think and to argue with him intellectually. The fact that he "incites one to refute his . . . assertions" is not accidental. But by accepting his assertions, one's mind (unlike Johnson's) is opened to new possibilities.

THOMAS R. HORTON
CEO, American Management Association
New York City

THE JAPAN SHUTTLE?

"Should Airlines Be Reregulated?" (June 19) missed the most obvious opportunity for improving the lot of beleaguered travelers—more deregulation. Think how quality of service would improve and prices drop if Japan Airlines, Lufthansa, and Singapore Airlines were allowed to fly domestic routes within the U.S. It's time our friends at Northwest and American Airlines were treated to the fresh breeze of international competition at home that we in the automotive industry have been enjoying.

W. JEFFREY HITCHCOCK
Bloomfield Hills, Michigan

FULL FEES FOR FULL SERVICE

With regard to full-service brokerage fees (Personal Investing, June 19), if Ellen Schultz could observe for one day the number of calls I receive on four incoming lines about my accounts, she would probably say, "Raise the fees." Investors want their assets watched. The last thing they need is a low-paid order taker.

MARSHALL C. SALE
Beverly Hills

A JURY OF HIS PEERS

Walter Kiechel III was right on target when he urged that a manager's performance review should include the opinions of people who work for him (Office Hours, June 19). At Arthur D. Little we have begun suggesting to our clients that they go one step further: Solicit comments from the manager's peers and counterparts in other units of the company with whom the manager interacts. Many of our clients have eliminated several levels of hierarchy. Getting things done means being able to function as effectively across the pyramid as up and down it.

ROBERT M. TOMASKO
Consultant to Arthur D. Little
Washington

FIRST TEXAS GIBRALTAR

In "The Screwiest S&L Bailout Ever" (June 19), you imply that I possessed options to purchase the common stock of Affiliated Computer Systems Inc. at the time that company purchased certain data-processing and related assets from Gibraltar Savings Association. This was not the case.

J. LIVINGSTON KOSBERG
Houston

CORRECTION

In the FORTUNE *Service 500 (June 5), net investment income of Allstate Life was shown in parentheses. It was, in fact, income, not loss.* ■

Address letters to FORTUNE, Time & Life Building, Rockefeller Center, New York, N.Y. 10020. Letters may be edited for purposes of clarity or space.

C89100-1

THE INTERNATIONAL 500 • THE WORLD'S BIGGEST COMPANIES

$3.50

FORTUNE

Here's What These People Will Need At Age 65

Bill Brooksbank
$3.2 million

THE 50 INTERNATIONAL

JULY 31, 1989

VOL. 120, NO. 3

FORTUNE

ABOVE: The good life in Florida, a retirees' mecca, photographed by Brian Smith.

COVER: These future retirees, all Texans, were photographed in Houston by E. J. Camp.

EXECUTIVE LIFE/Cover Story

WILL YOU BE ABLE TO RETIRE? 56

Too few people realize how much money they should be saving now to ensure a comfortable retirement. Instead they are living as though there's no tomorrow—even as Congress spends Social Security money and cost-conscious companies pare down pension benefits. Particularly if you're a baby-boomer, you will have to face up to a tough choice: Save more now or work more later. *by David Kirkpatrick*

RETIREMENT TAKES MORE THAN MONEY 66

THE ECONOMY

WHERE GLOBAL GROWTH IS GOING 71

The world economy in charts and tables.

CORPORATE PERFORMANCE

WANT THIS STOCK? IT'S UP 91,000% 97

John Malone's acquisition strategy has worked wonders for cable TV giant TCI. But what can he do next? *by Christopher Knowlton*

COMPANIES TO WATCH 108

MONEY & MARKETS

HAS THE BEATRICE LBO GONE PFFFT? 113

KKR's famous food-company leveraged buyout shows how investors may get unpleasantly surprised. The talk once was of a nearly $4 billion profit. Not anymore. *by Carol J. Loomis*

JAPAN LEARNS THE TAKEOVER GAME 121

Buyers still think long term, but they are moving faster and even walking away from overpriced deals. *by Gary Hector*

EUROPE

AGNELLI ON CARS, GREENS, AND JAPAN 133

In a frank talk with FORTUNE, the chairman of Fiat tells how he plans to meet the forces that are changing the European auto market.

POLITICS & POLICY

HOW BIG A MILITARY DOES THE U.S. NEED? 140

With the cold war cooling, the Pentagon budget could be cut by a third. Think what could be done with the extra $100 billion a year. *by Lee Smith*

"If they don't start actively planning for it, the future of retirement for baby-boomers is work."

PAGE 56

"We all know KKR is going to come a cropper one of these days."

PAGE 113

"If I could do anything I wanted, maybe I would take over a company like BMW or Volvo."

PAGE 133

"We may have a higher percentage of combat soldiers abroad for longer than anyone since the Romans."

PAGE 140

"People think scientists are weird, skinny men with bushy beards and steaming beakers."

PAGE 155

"I have seen the Black and White future, and it works."

PAGE 266

TECHNOLOGY

THE HOT DEMAND FOR NEW SCIENTISTS 155
White males don't like science and engineering the way they used to. That spells big trouble in R&D labs—or golden opportunity for women and minorities. *by Peter Nulty*

TRADE

TOP U.S. COMPANIES MOVE INTO RUSSIA 165
In a novel consortium, oil exports by Chevron can pay profits won by Kodak. Each company is betting on Gorbachev's reform. *by Louis Kraar*

SELLING

GROWING FAST IN PAPER AND PENS 173
Three new retail chains want to be the Toys "R" Us of office supplies. *by Susan Caminiti*

ENTREPRENEURS

THE BIG MONEYMEN OF PALESTINE INC. 176
If refugee camps come to mind when you think of Palestinians, meet these business people. A new state is years away—at the earliest—but such men would shape its economy. *by Shawn Tully*

DEPARTMENTS

EDITOR'S DESK 6

INDEX 14

NEWS/TRENDS 18
A capital gains tax cut is not dead yet, Japan sails on, ESOPs as poison, and more.

FORTUNE FORECAST 31
The expansion will survive a slow summer and then pick up in the fall. *by Vivian Brownstein*

PERSONAL INVESTING 39
A Third World deal will put bounce in big bank stocks. *by Joshua Mendes*

Also, Anheuser-Busch barrels along, takeover speculation lifts airline stocks, and Portfolio Talk with Jim Barksdale of Equity Investment.

FORTUNE PEOPLE 266
Eric Hilton checks into a boardroom, John Johnson tells how he got in clover, and Tom Wathen stumbles into a candy store. *by Mark Alpert*

ON THE RISE 267

LETTERS TO FORTUNE 269

KEEPING UP *by Daniel Seligman* 273

SPECIAL REPORT

THE INTERNATIONAL 500

- **THE WORLD'S 100 BIGGEST INDUSTRIAL CORPORATIONS** 280
  New powers emerge among the titans.
- **THE WORLD'S 50 BIGGEST BANKS** 286
- **THE INTERNATIONAL 500** 290
- **WHO DID BEST AND WORST** 310
- **NOTES** 314
- **ALPHABETICAL INDEX** 316
- **THE 100 BIGGEST BANKS OUTSIDE THE U.S.** 320

EDITOR'S DESK

International editor Donald Holt (center) with FORTUNE's world-class world list team

LONG BEFORE "globalism" entered the vocabulary of business, FORTUNE was the first publication to peel back the opaque veil of international accounting and identify the world's mightiest enterprises. We began our international directories in 1957—and we have been expanding and refining them ever since. This year FORTUNE's lists—regarded from Tokyo to Toledo as the definitive scorecards on the performance of the world's largest corporations—continue to break new ground.

In addition to ranking the 500 largest industrial companies outside the U.S. and the 100 largest non-U.S. banks, we have expanded our list of the entire world's largest industrials—both in the U.S. and abroad—from 50 to 100. And, for the first time, we rank the world's 50 largest banks. Altogether, this year's lists give managers a clearer idea of how they measure up against their international rivals.

How fare the global titans? Reporters Susan Kuhn and David Morrow, who called on correspondents from Stockholm to Santiago to Singapore in amassing the thousands of figures that make up the lists, discovered that non-U.S. corporations are singing the same happy song as their American cousins. Says Morrow: "Restructuring and the pursuit of efficiency are worldwide phenomena. Only 16 companies on the International 500 list lost money last year, a record low." Kuhn was impressed by the tremendous overseas strength of U.S. companies. If they stood alone, for example, Ford's subsidiary in West Germany and GM's in Canada would each rank among the world's 100 largest industrials.

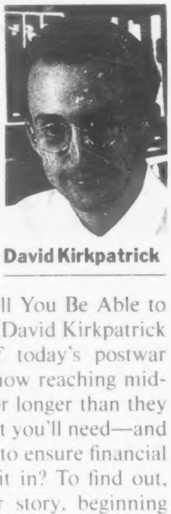
Shawn Tully

By contrast, reporters Jacob Park and Joan Viebranz, who assembled the bank lists, discovered that while the biggest U.S. banks are among the world's most profitable, few can match assets with their overseas counterparts. The tally among the top 50 banks: Japan, 23; Europe, 20; U.S., 4.

Our international editor Donald Holt and chief of reporters Evelyn Benjamin supervised the team of reporters, photo researchers, and graphic artists in the huge job of marrying the words, numbers, and images that make up this year's trove. FORTUNE's editorial production department, headed by Donald Biglands, converted the reams of data and text into the 27-page package of stories, lists, and charts that begins on page 279.

To get closer to the thinking of the people shaping the world economy, FORTUNE tapped its own expanding global network. We joined last year with French publisher Hachette to launch FORTUNE *France* and this year with the Italian publisher Mondadori to start FORTUNE *Italia*. So when Fiat Chairman Giovanni Agnelli accepted FORTUNE *Italia* managing editor Andrea Monti's request for a rare on-the-record interview, FORTUNE *France* managing editor Claude Bunodière and our own European editor, Richard Kirkland, flew to Turin to discuss what one of the world's leading automakers sees ahead. The interview, which will also appear in our French- and Italian-language sister publications, begins on page 133.

An article in an early test issue of FORTUNE *Italia* additionally provided the inspiration for the revealing portraits, beginning on page 176, of a little-known group of internationally minded managers. They are the Palestinian entrepreneurs who nurtured flourishing businesses in the arid environment of the Palestinian diaspora. Our Paris bureau chief, Shawn Tully, traveled from the blazing sands of Kuwait to the chilly damp of Zurich to hear firsthand how these self-made tycoons long to build an economy in the homeland they dream of creating.



David Kirkpatrick

And what about life beyond the world of work? In his report "Will You Be Able to Retire?" associate editor David Kirkpatrick discovers that many of today's postwar baby-boom employees, now reaching midcareer, may have to labor longer than they think. Do *you* know what you'll need—and what you'll need to do—to ensure financial security after you pack it in? To find out, read Kirkpatrick's cover story, beginning on page 56.

Marshall Loeb
MANAGING EDITOR

[illegible] For subscription queries, call Customer Service at 1-800-541-1000.

taken no fancy dives. And the yen remains strong against the dollar despite a recent brief plunge. Progress has even been made on the trade front: U.S. Trade Representative Carla Hills satisfactorily concluded a bitter dispute, allowing **Motorola** increased access to Japan's cellular phone market.

Meanwhile, Uno, who assumed office only June 3, may not last much longer. Japan's business community hopes that his place will be taken by Masayoshi Ito. Ito, 75, was offered the job before Uno, but said no because he did not believe the LDP was serious about reform. If Ito takes the helm, he would at least provide stability while the bureaucrats continue to keep Japan on its triumphant course. —**Carla Rapoport**

ESOPs AS POISON

■ Major corporations are rushing to set up or expand employee stock ownership plans, or ESOPs (see table for a sampling). The some 100 that have initiated them this year include companies that are installing ESOPs as tax-sheltered employee benefit plans. But many managers see in ESOPs a new way to defend themselves against hostile takeovers.

This latest in poison pills follows 1988's raid on **Polaroid** by Roy Disney's **Shamrock Holdings**. Polaroid was in the process of creating an ESOP, giving employees 14% of the company, when Shamrock attacked. Under Delaware law, where Polaroid and most big U.S. corporations are registered, a takeover bid must be accepted by the holders of at least 85% of nonaligned shares, which excludes inside directors. Since employees with ESOP shares and trustees with power to cast ESOP votes usu-

JUST DESERTS & TWO DIFFERENT SETS OF WHEELS

▶ Cartier International CEO Alain Perrin, at rear, torched a pile of counterfeit Cartier shirts in Madrid. Knockoffs, made mostly in the Far East, cost makers of expensive, name-brand goods plenty. U.S. manufacturers lose at least $6 billion a year.

AGENCE VU

▼Along with PepsiCo's other 100,000 employees, truck driver Tom Atherton, 36, got stock options equal to 10% of his pay. "A nest egg for my three kids' college," said Atherton, at work in New Hampshire. Only Pfizer has a similar egalitarian plan.

ANDY FREEBERG

ALAIN KELER—ODYSSEY

▲ Plugged into an extension cord, this battery-powered car gets a charge outside Peugeot's research center near Paris. In 1991 you may see such vehicles in Los Angeles, where the city will promote them. They cost about $15,000 each, plus 5 cents a mile for juice. It must be recharged for ten hours every 60 miles. Top speed: 60 mph.

▼ Paul Bilzerian, 39, Singer's former boss, may never live here: He faces fines of up to $2.3 million and up to 45 years in jail for fraud and other felony convictions. But his Tampa mansion keeps on growing. Cost (says he): $6 million.

▲ Forget about beating the dealer. The Mazda Miata is so hot, buyers have to top the $18,334 fully equipped sticker price by up to $4,000 to get one.

JIM STERN—ST. PETERSBURG TIMES

ally side with management, a big ESOP plan can stop a hostile bid. Future raiders may well sue trustees, claiming violation of fiduciary duty to employee shareholders. Steven Goldberg, a partner of Theisen Lank Mulford & Goldberg, a Wilmington law firm, says that a company's defense will be stronger if its ESOP is in place before a takeover bid.

Congress is considering legislation that would lessen tax benefits for lenders who finance ESOPs, making some plans more expensive. Yet the ESOP boom is likely to continue as a defense against takeover. Says Lilli Gordon, research director of Analysis Group, a Belmont, Massachusetts, economics and financial consulting firm: "ESOPs enable management to place a large block of shares in friendly hands, quickly." **– Wilton Woods**

CORPORATIONS WITH ESOPs IN PLACE

Company	ESOP stake
Anheuser-Busch	4%
General Mills	2%
ITT	8%
Lockheed	18%
McDonald's	3%
PPG Industries	14%
Procter & Gamble	21%
Quaker Oats	3%

SOURCE: ANALYSIS GROUP

OF FAME, FORTUNE, AND THE SUBWAY

■ What would you do if you won the New York State lottery? Answers are familiar to millions who travel New York City's subways, where a billboard campaign features real lotto players answering that very question. Now they can see how *Variety* executive publisher Gerry Byrne, the 28th to appear in the campaign so far, would spend the money. Says the self-confessed tinkerer: "I'd buy a FORTUNE 500 company and fix it."

"I've always loved to tinker.
So I'd buy a Fortune 500 company and fix it."
Gerry Byrne, Manhattan, Publishing Exec.
NEW YORK LOTTO
All you need is a dollar and a dream.

See anyone you recognize? Byrne meets Byrne underground.

ANDY FREEBERG

Have no fear, corporate defense squads. Byrne has been playing the lottery for five years and has collected a mere $10. The biggest lottery winners are those who stage them. In eight years annual sales have increased in the U.S. from $49.2 million in two states to $15 billion in 27, according to *Gaming & Wagering Business* magazine. The states' cumulative profit through June 1988: $31 billion. **– Julia Lieblich**

STRESS ON THE JOB? GO TO CALIFORNIA

■ Workers' disability compensation ain't what it used to be. In California, reported mental stress claims—stoked partly by classified ads like those shown here—have increased seven times since 1980 to 9,400 last year.

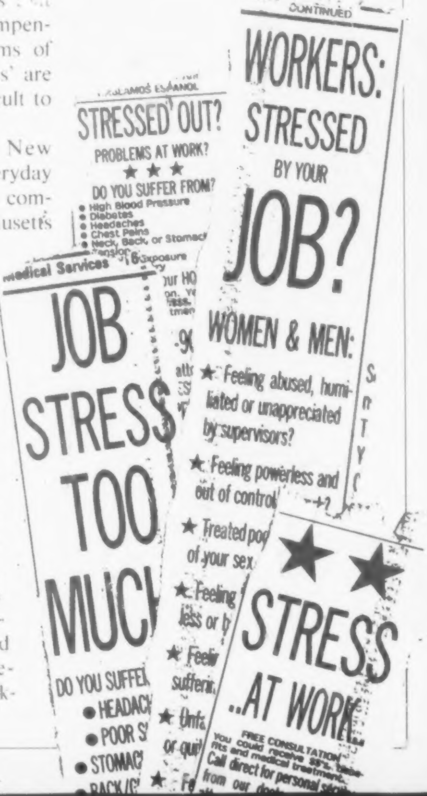
Different states impose different ground rules for worker compensation claims for stress. California is the most liberal. Under state law, explains Dr. Thomas Parry of the California Workers' Compensation Institute, a research organization whose members are insurance companies, "it is the *individual's* perception of stress that determines what is a compensable work injury. Claims of stress from 'job pressures' are very subjective and difficult to disprove."

In contrast, under New York law normal, everyday stress is not a basis for compensation. And Massachusetts excludes claims for stress brought on by such lawful job changes as demotions or transfers.

In California, most insurers do not think it's worth the effort to fight stress claims. Rather than spend close to $6,000 in legal costs, they settle nearly 80% of the cases out of court for an average of $7,450. The most recent totals are for 1987, when insurers paid an estimated $176 million in settlements. White-collar workers, many in clerical jobs, make two-thirds of all mental stress claims.

The seeming ease with which employees can wheedle money out of their employers has spawned a subcategory of the legal profession—lawyers who specialize in such claims on a contingency basis, usually pocketing about 13% of the settlement.

Employers and insurance companies obviously don't like the increasing number of claims, hence the Californians for Compensation Reform, which counts **Clorox**, **General Electric**, **Marriott**, **McDonnell Douglas**, and **Northrop** among its members. The group is backing a bill that, among other things, would make ordinary job stress something that employees must accept, just as they do their pay checks. **– Rahul Jacob**


CONTINUED
WORKERS: STRESSED BY YOUR JOB?
WOMEN & MEN:
★ Feeling abused, humiliated or unappreciated by supervisors?
★ Feeling powerless and out of control
★ Treated po
of your sex
STRESSED OUT?
PROBLEMS AT WORK?
★ ★ ★
DO YOU SUFFER FROM?
● High Blood Pressure
● Diabetes
● Headaches
● Chest Pains
● Neck, Back, or Stomach
Medical Services
JOB STRESS TOO MUCH
DO YOU SUFFER
● HEADACH
● POOR S
● STOMACH
★ ★
STRESS ..AT WORK
FREE CONSULTATION
You could receive
Call direct for personal

WILL YOU BE ABLE TO RETIRE?

You can't count on a pension or Social Security the same way your parents did. If you're a baby-boomer, that leaves you a choice: Save more now or work more later. ■ *by David Kirkpatrick*

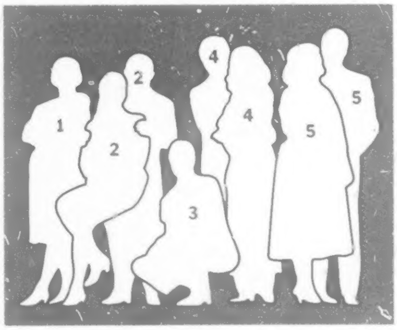
May your hands always be busy
May your feet always be swift
May you have a strong foundation
When the winds of changes shift . . .
May you stay forever young.
—"Forever Young," *by Bob Dylan, 48*

A PLEASING THOUGHT from a man who in 14 years will be eligible for Social Security. But in fact your feet eventually may begin to drag, and you may want to retire. When you do, will you have a strong foundation? Consider this: In an inflation-free world, the median FORTUNE subscriber, whose household income is about $83,000 and whose age is 45, will need $1.2 million in financial assets in order to retire at 65 without a reduction in his or her standard of living. Crank in an inflation rate of 4.5% and the figure rises to $2.8 million.

Getting together that kind of money promises to be harder than ever. Termites threaten the three-legged stool that Americans have traditionally relied on to provide for their retirement—Social Security, private pensions, and savings. Congress is spending your Social Security money, cost-conscious companies are pruning pensions, and future retirees are living it up today rather than saving for tomorrow.

All the while, the baby-boom generation, 78 million strong, is beginning to creep past the point—age 40—by which, the experts say, you should have begun planning for retirement. Too few have started preparing in earnest, and still fewer are saving on the scale required. Since boomers are healthier than their predecessors, they're likely to live longer. If these hard-working sorts finally vacate their offices at anything like 62, today's average retirement age, they will have the longest, and costliest, retirements in history.

And who's going to help them pick up the check? Don't count on the generation coming along. By the time the last weary boomer hits 65 in 2029, the ratio of workers to retirees will drop from about 3.3 to 1 today to less than 2 to 1. That could create tremendous economic conflict with an overtaxed "baby bust" generation. Faced with such shifting winds of change, your hands could stay busy for considerably longer than you'd expected. Says Steve Vernon, 36, an employee benefits expert with the Wyatt Co. consulting firm: "If they don't start actively planning for it, the future of retirement for the baby-boomers is work."



WHY SO MUCH?

■ To calculate the total financial assets the Texans on the cover must have to retire at 65, Houston's Decker & Associates considered age as well as all current investments, household earnings, and desired post-retirement income. The numbers on the cover include the future lump-sum value of Social Security, pensions, and all savings. (1) Government-relations specialist Nancy Sims, who is 30, earns $32,000; (2) Karen and John Kelsey, 45 and 48, who are a realtor and a stockbroker, earn $500,000; (3) systems consultant Bill Brooksbank, 38, makes $78,600; (4) Lionel and Katherine Sosa, 50 and 35, run an ad agency and a public relations firm, respectively, and earn $165,000; (5) Anna Loraine and Charles Vienn, 46 and 49, a hospital lab supervisor and a marketing consultant, earn $60,000.

BENEFITS EXPERTS and financial planners observe that if you are over 50, your retirement plans are probably shipshape. Fearful memories of the Depression made many older Americans determined savers. Their timing was good too: They were at work during the country's most robust years of postwar economic growth, when employers were generous with benefits. Their investment in homes commonly yielded a return many times greater than inflation. Social Security looks reasonably secure for the next 20 years. And they were the fecund generation who spawned the baby boom. All those grown-up babies will be

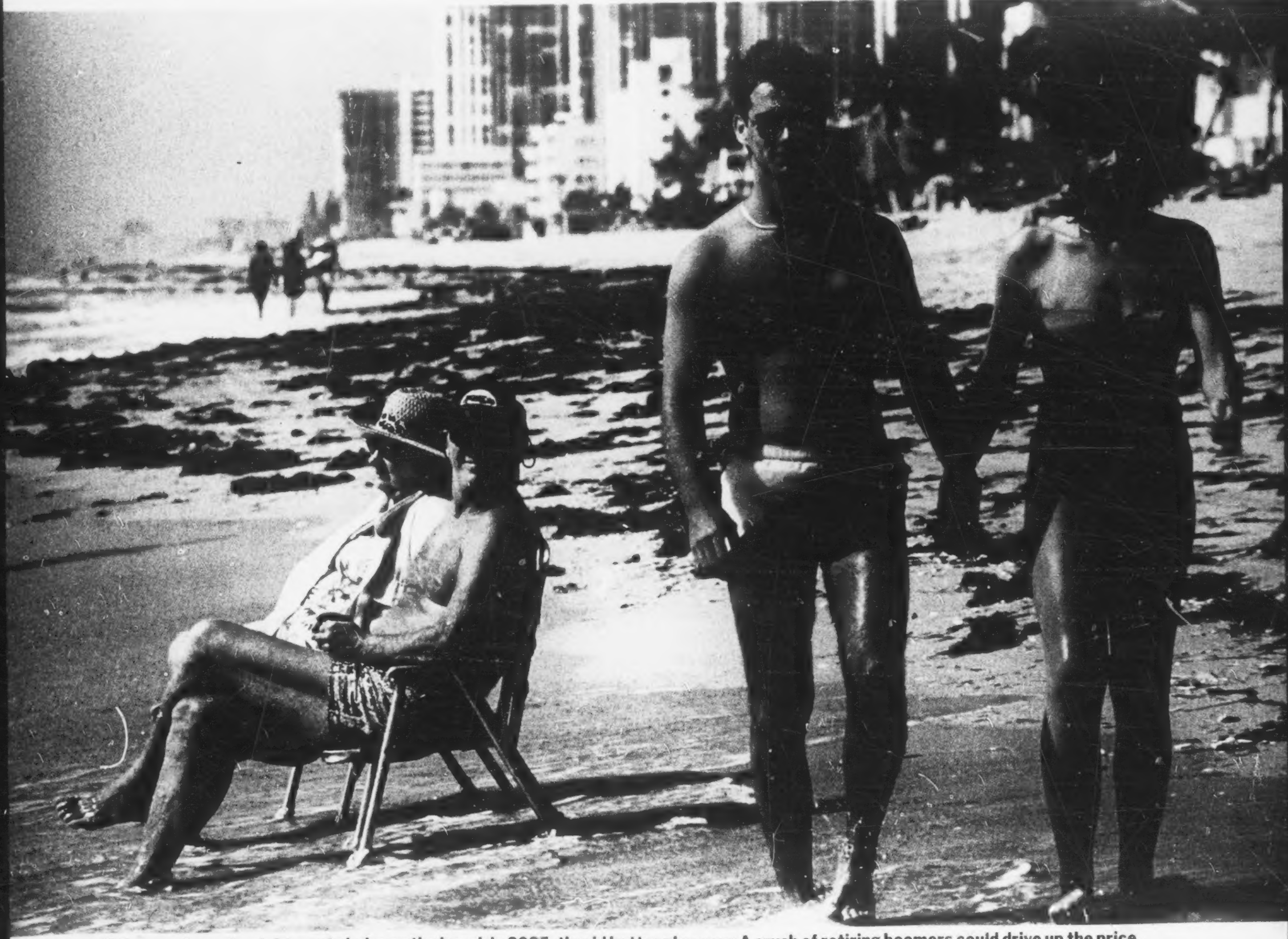
REPORTER ASSOCIATE *Constance A. Gustke*

around to help bear the responsibility, and the expense, of what has come to be known as elder care.

If you are under 50, on the other hand, you may feel too busy to plan for retirement and too broke to save. The average workweek is up, average leisure time is down, and the average baby-boomer thinks time's winged chariot is running over his foot. Says Paul Hewitt, 37, executive director of the nonprofit Retirement Policy Institute: "The baby boom as a generation has been its own worst enemy. Whenever we wanted anything the price went up, and when we sold the price went down. So we got less for our labor and paid more for our houses. When we want to sell those houses the price will go down, and when we all want medical care in old age, prices will go up."

COLLAR many people in their 30s or 40s for a moment between the phone and the freeway and they'll facetiously volunteer that they'd love to retire tomorrow, but then admit that's about as deep as their reflections on the subject go. Says Ken Sandbank, a 32-year-old copywriter for the Chiat/Day advertising agency in New York: "I don't give much thought to retirement. It's intimidating. My identity is tied to my career." While this may not seem that much of a departure from past practice—how many 40-year-olds have ever seriously planned for retirement?—some experts argue that insouciance is more widespread among this generation than among its predecessors. Says Donald L. Kanter, a psychologist and co-author of a new book called *The Cynical Americans: Living and Working in an Age of Discontent and Disillusion*: "These people have seen inflation, layoffs, and a stock market crash. Ordinarily, looking out for No. 1 would lead to planning for retirement. But if it seems society is going to hell, the whole effort isn't worth it."

So you go with blind optimism instead.



If the couple on the right want chairs on the beach in 2025, they'd better plan now: A crush of retiring boomers could drive up the price.

PHOTOGRAPH BY BRIAN SMITH

Baby-boomers' expectations of retirement remain high even when they haven't done enough planning or saving. Nancy Sims, 30, a Houston consultant, has a typical vision of the future: "I see my retirement as very active. I'll have enough money to live and do volunteer work for the arts. Also I'll travel." In May, Merrill Lynch released the results of a survey it conducted among 45- to 64-year-olds nationwide. The survey found that 74% expect a standard of living in retirement the same as or better than today's, and 59% want to retire before age 65. Yet only 18% save at least 20% of their income, a minimum for anyone who wants to leave the work force early.

Respondents in the Merrill survey also shared in the common misperception that if you have a substantial income, you're somehow insulated from downward mobility after retiring. Among those earning $50,000 or more, the number expecting no drop in their standard of living jumped to 86%. In fact, the more you make, the larger the share of it you need to save.

Most people find that about 70% of their preretirement income will maintain their standard of living. Social Security's maximum individual benefit is only $10,788 a year. Accordingly, the portion of earnings Social Security will replace diminishes rapidly as you climb the income scale. Someone with a typical company pension who earns $30,000 a year at retirement may not need to save at all, but someone who earns $125,000 will need savings that generate enough to replace 21% of preretirement income (see chart).

STEVEN B. ENRIGHT, a financial planner with Seidman Financial Services, says more than three-quarters of his clients earning $100,000 and up, who on average have assets of at least $1 million, cannot meet their anticipated financial goals in retirement without significantly increasing their saving. He's talking about people like John Kelsey, 48, a stockbroker with Smith Barney in Houston. He earns $500,000 a year with his real estate broker wife but didn't think about planning for retirement until recently. "When you're so busy doing things," Kelsey says, "you tend to think your career will grow so much you'll be able to save later. When you're on the leading edge of your profession there's a feeling of invulnerability."

Don't assume you'll work to the end, advises gerontologist Robert Atchley. As he asks, "What will you do if you're disabled?"

Consider the vulnerability of that median FORTUNE subscriber, age 45 with a household income of $83,000. If his income increases 6% a year, no great shakes if inflation runs a constant 4.5% annually—assumptions also used in calculating what the cover subjects will need—he will be making $266,192 in 20 years, calculates Decker & Associates, a Houston firm that helps employers and employees figure the value of retirement benefits. Assume he will need 70% of that, or $186,305, to retire comfortably. To maintain his standard of living until he's 90 in the face of that same inflation rate, he will need to have assembled financial assets of $2.8 million by his retirement in 2009.

Social Security should provide an inflation-adjusted $22,500 a year by then, which Decker figures is equivalent to the payout from an annuity worth $342,569 in that year. Assuming the subscriber has ten years of service with a typical large company, his pension benefits, which will pay $60,716 a year, are worth another $621,379. This median subscriber has an investment portfolio of $142,100, which should grow to $726,422, assuming an 8.5% after-tax return. On retirement these assets will total $1,690,370, leaving a shortfall of $1,146,177 to be made up from additional savings. That would mean setting aside 17% of his household's pretax income from here on in. To retire at 62, he ought to save something approaching 30%.

This news may come as a nasty surprise. "There is an abysmal lack of understanding of what retirement income is going to be," says Suzanne Kenney, manager of something called Employee Listening Services at Hewitt Associates, a compensation and benefits consulting firm. Hewitt's surveys find that only 49% of employees feel they have a good grasp of their retirement benefits, compared with 71% who say they understand all other benefits. In Kenney's focus groups she asks what percentage of their preretirement income employees think their pensions will provide. "People are afraid to even hazard a guess," she says. "We have frankly been shocked that people don't have any idea at all."

THE SHORT ANSWER about pensions is they probably aren't as good as you think they are. Many employers are moving away from defined benefit pensions, long the most popular type, in favor of so-called defined contribution plans. For employees who don't change jobs frequently, defined benefit plans are vastly preferable. They guarantee a monthly cash benefit based on an employee's salary and years of service. The employer funds the plan and insures employees get paid.

By contrast, in defined contribution plans, which include profit-sharing and 401(k) plans, the employer puts a certain amount into an individual's account each year, sometimes merely matching his contribution. Given the effects of tax-free compounding, the payoff can be handsome, but the employee takes the risk, not the company. The number of employees whose primary pension coverage was in defined contribution plans more than doubled from 1980 to 1987, to 13.4 million, reports the

Senator David Durenberger worries about burdening future taxpayers. He founded Americans for Generational Equity (AGE).

Labor Department. Meanwhile the number primarily covered by a defined benefit plan dropped 4%, to 28.5 million.

Cost-conscious employers can save big by making the switch. If it's a tough year, companies usually have no obligation to pay into a profit-sharing plan. In 401(k) plans, not all employees choose to participate—incredible stupidity on their part—and it typically costs a company only about 1% to 2% of its total payroll costs to match employee contributions. Compare that with the 7% of payroll that on average it costs to fund a defined benefit plan. Last fall Merrill Lynch terminated its defined benefit plan in favor of a defined contribution scheme and booked a $220 million after-tax gain as a result.

IF YOU ARE at all tempted to live for today, defined contribution plans can get you in big trouble when you change jobs. Since the assets belong to you, you can usually take your account with you as a lump sum. Although there's generally a 10% tax penalty for withdrawing the money and spending it, most people do. The Employee Benefit Research Institute, a nonprofit research organization, found that in 1983, astonishingly, only about 30% of lump-sum payouts were saved in any form, including as an investment in a home.

If you don't spend your entire career with one company, even a defined benefit pension may not be much help. Such plans usually aim at replacing about 40% of preretirement income, but only lifers wind up with that. The Congressional Research Service calculates that working for five employers over the course of a 42-year career would leave you with half the pension of your counterpart who never moved.

Boomers change jobs more often than their parents did. Take Bill Brooksbank, 38, president of a small Houston consulting firm, who worked earlier for Tenneco, Exxon, and a subsidiary of Merck. His father spent his entire career with Baltimore Gas & Electric and retired comfortably at 59. But so far young Brooksbank's only vested pension is $4,800 a year at 65, from Tenneco. If inflation is a mere 4%, that will give him the equivalent of only about $1,700 a year in today's purchasing power. "Corporate America can't be relied on for retirement money," says this Harvard MBA. "You have to be self-reliant." Chastened, he's currently saving 17% of his pay.

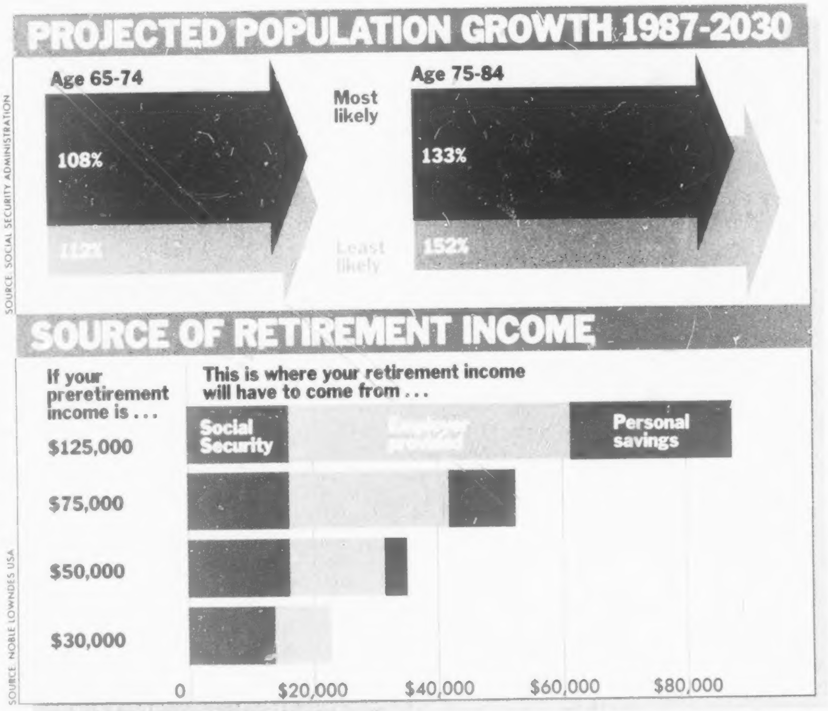
Better not count on Social Security's so-called surpluses to make up for shortfalls in your corporate pension. Congress has been reducing future benefits. Most young Americans probably didn't pay much attention in 1983 when Congress raised to 67 the age at which workers become eligible for the maximum Social Security benefit, effective 2027. But who will have to wait? Today's 29-year-olds. Congress also imposed a tax on 50% of Social Security payouts to retirees with incomes of $32,000 and above for a couple, $25,000 for a single person. It was the first time any Social Security benefits got hit by taxes, but it probably won't be the last.

At the same time, Social Security is taking a progressively larger bite out of income that might otherwise go to, say, savings. The maximum Social Security tax in 1959 was $120. In 1989 it will be $3,605 for individuals earning $48,000 or more.

In part because of the higher taxes, the system is in excellent shape—today. In 1989 taxes will generate $58 billion more than the cost of providing benefits to retirees. But that $58 billion isn't being squirreled away somewhere; it's being spent by the government wherever it chooses. It also masks the fact that the federal deficit would be just that much higher if the money weren't available. In effect, other parts of the federal government are writing IOUs to the Social Security trust fund. The surpluses now built into the system are expected to eventually generate as much as $12 trillion by 2030 to provide for the enormous hit of baby-boom retirements.

WHAT IF it's a $12 trillion IOU instead? Who will pay? Unless the boomers' benefits in retirement are taxed heavily, or the government invests the money in productive assets, the burden will fall mostly on hapless baby-busters. If benefits stay roughly where they are now, workers in 2040 could find Social Security taking as much as 40% of their paychecks.

Minnesota Republican Senator David Durenberger worries so much about burdening future taxpayers that he has founded a group called Americans for Generational Equity (AGE). He thinks beneficiaries of future government social insurance programs should pay for more of their benefits


PROJECTED POPULATION GROWTH 1987-2030

SOURCE: SOCIAL SECURITY ADMINISTRATION

SOURCE OF RETIREMENT INCOME

SOURCE: NOBLE LOWNDES USA

The elderly population will swell as the baby boom jogs into old age. If your household earns more today, you need to save more to maintain your standard of living. The calculations assume you have a typical pension and will need 70% of your preretirement income.

Like Dan Young, more will work at 72.

and points approvingly to the income-tested co-payments for Medicare catastrophic illness coverage Congress put in place last year. Durenberger argues that today's system encourages people not to save, and he wants to change that. Reducing taxes on interest from savings would be a good way to start. Says the Senator: "It's all about signals. When people find they're being rewarded rather than penalized for saving, they'll realize they can't rely on others to take care of their retirement."

PERSUADING individuals to start saving won't be easy in this age of Acuras, aquavit, and acquisitiveness. While the personal savings rate in the U.S. has improved a bit of late, at 5.2% of disposable income it remains among the lowest in the industrialized world. Susann Felton, 40, a purchasing manager for Potomac Electric Power in Washington, and her husband, who writes computer software, get flak from their friends for putting away 20% of their income: "People look at us like we're crazy because we save for retirement. They say, 'You ought to be taking a trip to the Caribbean or something.' "

The friends taking the trips will probably wind up working later in life than the Feltons. They may not mind that. Merrill Lynch's survey of people 45 to 64 found that 52% expect to work at least part time in retirement. Robin Thomas, 38, a marketing manager for a cable television company in New York City, speaks for many baby-boomers when she says, "I never see myself as being idle. I'll probably work into my 70s. I don't look forward to retirement."

Quite a few economists foresee a worker shortage so severe that at retirement age boomers will be able to cut a deal to continue working on their own terms. "We won't retire," says Wyatt's Steve Vernon, "we'll retread." Companies are already hustling to recruit older workers. The Days Inns motel chain started hiring seniors for its Atlanta reservations center in 1985 and now employs more than 65 of them. The oldest is 77. Dan Young, 72, began working in the center three years ago. "I wanted to be wanted," he says. "I don't work here for the money but because working keeps me young."

Working after 65 may sound acceptable from 25 years away, but what if your health fails? "Everybody needs a retirement plan even if they don't plan to retire," says Robert C. Atchley, director of the Scripps Gerontology Center at Miami University in Ohio.

The rapidly rising cost of health care has all the experts worried. The Brookings Institution recently estimated that, with inflation figured in, by 2020 the cost of a year in a nursing home would be about $158,000. Corporations are already finding the cost of their medical plans rising 20% to 30% a year. A proposed new accounting rule would require companies to recognize liabilities for future retiree medical care as they accrue, a change that could well lead to cuts in benefits. Wyatt Co. found in a 1988 study that 39% of big corporations either have already reduced or eliminated medical benefits for future retirees, or plan to.

Staying healthy is your best single investment for retirement. While boomers stand a good chance of living into their 90s, little headway is evident in the fight to prevent diseases such as Alzheimer's or arthritis, whose incidence is higher after 85. Active workers today have a 1-in-5 chance of eventually needing long-term care, says Atchley. Yet many boomers still shirk planning with the glib and fatalistic logic of a 30-year-old New York woman who says, "I don't believe the statistics. With all the environmental problems I have a hard time believing I'll live longer. I don't want to live until 90 anyway if I have to live in a nursing home." Her attitude may change, though, as she gets closer to that age.

SOUND THINKERS who do want to start planning should begin by taking a hard look at their assets now, at what their employers will provide, and at their investment alternatives (see table). If the numbers fall short of the goal, you have several options: Save more, try to increase the return on savings you already have, delay retirement, or decide to accept a lower postretirement standard of living. Don't forget that inflation will probably continue after you retire. You may plan to take your pot of $1 million and put it into a 7% tax-free bond, to yield a healthy-sounding $70,000 of income in your first year of retirement. But if inflation runs along at a modest 4% annual rate, in ten years that $70,000 will only buy about $47,000 worth of food, housing, and medical care.

Thirty-year-olds can probably finance a comfortable retirement by saving at least 10% of income from now on. If you wait

THE LONG-TERM PAYOFFS ON SAVINGS

	COMPOUND TOTAL ANNUAL RETURN*		
INVESTMENT	**30 YEARS**	**20 YEARS**	**10 YEARS**
S&P 500	9.70%	9.54%	16.33%
20-year government bond	5.76%	7.82%	10.61%
20-year corporate bond	6.31%	8.30%	10.86%
30-day Treasury bill	6.16%	7.50%	9.09%
Inflation	4.87%	6.30%	5.93%

*For periods ending 12/31/88.

SOURCE: IBBOTSON ASSOCIATES, CHICAGO

until you're past 40 to get started, put away 15% to 20%. If you're self-employed or don't have a pension, you may have to raise the amount to—brace yourself—35% to 40%. If your employer offers a 401(k) plan, you've got a terrific way to store up dollars tax-free. Contribute the maximum. Find out whether your company provides a generous pension. "If they don't," advises Wyatt's Vernon, "move to one that does." If you're not eligible for a pension, open an IRA.

And get ready to practice what just might become the fashion among boomers in the 1990s: postponing consumption. Says Emily Andrews, 47, a pension expert at EBRI who puts away about 15% of her income and drives a 1984 Toyota Corolla: "People laugh at my car. But I want to be a rich old lady. It's a lot easier to be poor when you're young than when you're in your 70s." To join her on the beach or the golf course in 2025, start planning—and saving—now. ▪

RETIREMENT TAKES MORE THAN MONEY

▪ Financial security is just the underpinning for a pleasant retirement. If you're going to prepare yourself psychologically, better start now rather than in 2015. A few suggestions:

While you may not think you have time, try to develop interests outside your job. Says the Scripps Center's Robert Atchley, one of the country's leading gerontologists: "A full human life is one that explores its potential in not just one but a number of realms—artistic, family, spiritual, and work. People who have developed balance among those dimensions tend to be more at peace with themselves late in life. They don't have a sense of opportunity missed."

Start doing volunteer work. "I've never known a successfully retired older person who wasn't involved in doing something for others," says Bill Fitch, 75, the senior retirement consultant for the National Council on the Aging. For ten years Fitch has been conducting seminars on retirement, some of them free. Before that he was executive director of the Council. That doesn't mean that he lives like an impoverished social worker. This year he bought himself a bright red Mustang convertible. "I call it the spirit of 76," he says.

Expect to learn new tricks. Retirees are growing more adventurous on this front, and educational programs are sprouting up to accommodate them. Elderhostel, a fast-growing Boston-based group, will this year enroll 1[illegible]0 students age 60 and up in classes ranging from "Prehistoric Art of Southwest New Mexico" to "How to Ring English Handbells." Colleges and cultural institutions around the world host the week-long classes, even when their regular programs are in session. The average fee is only $240, including room and board. When that eminent theorist of retirement, Bob Dylan, conjoined "the old folks' home and the college," he was predicting the future.

More women than men will live to enjoy it; plan your dance card accordingly. While one-third of boomers will likely live to 85, there is no sign that the difference in longevity between men and women will disappear. Women will account for 60% of aged boomers, says Cheryl Russell, editor-in-chief of *American Demographics* magazine.

Don't expect your children to take care of you. As many as 20% of babyboomers will remain childless. If you have been working so hard you haven't had time to get close to the little nippers, don't think you'll do much better on this front later on. Future retirees will have to pay for many services traditionally provided free by family members, predicts Mathew Greenwald, a Washington, D.C., demographer and market researcher.

Look at it as your last chance to live the Aquarian life. Russell, 36, predicts that some baby-boom retirees without kin will form communes. "It won't be like the Sixties," she says, "but more of a grouping together, like a nuclear family." She expects her generation to plunge into social activism again once it's freed from full-time work. As their thoughts turn to their approaching demise, boomers may also reacquaint themselves with Far Eastern philosophies popular in the 1960s, or even with the religion of their childhood. Life comes full circle, even if you can't stay forever young.

Boomers may retire to communes like this one in Massachusetts.

RICHARD HOWARD

THE ECONOMY

WHERE GLOBAL GROWTH IS GOING

STRIKE UP THE BAND for the world's vibrant capitalist economies. The rain that keeps threatening the parade can't stop the global expansion from marching into a seventh year of growth, the longest since World War II. Forecasters look for more gains next year, though the pace will slow. On the following pages are snapshots of the expansion and where it is headed, based on data of the economic forecasting firm Data Resources.

Led by a powerful surge in investment, the boom has raised output and lowered unemployment around the world. Consumers are stepping high, too: even the industrious Japanese are learning to spend. European investment, the strongest since the 1960s, partly reflects anticipation of 1992, when the European Community creates a single market. Within the EC growth lags only in Britain.

Where else might rain fall? Inflation is creeping up. So far it has been manageable. Says economist Bill Martin of UBS Philips & Drew in London: "In many ways the rise was a fairly painless penalty to pay for the very vigorous rates of growth." But capacity is under strain around the world, and wage pressures are mounting, especially in the U.S. and Asia's Little Dragons. Inflation is already turning nasty in Hong Kong and South Korea. Even Japan is beginning to feel a touch. In many Latin American countries it has become epidemic—it's probably worst in Peru, at more than 5,000% a year. Inflation has joined debt that can't be repaid and declining GDP per capita among the continent's woes.

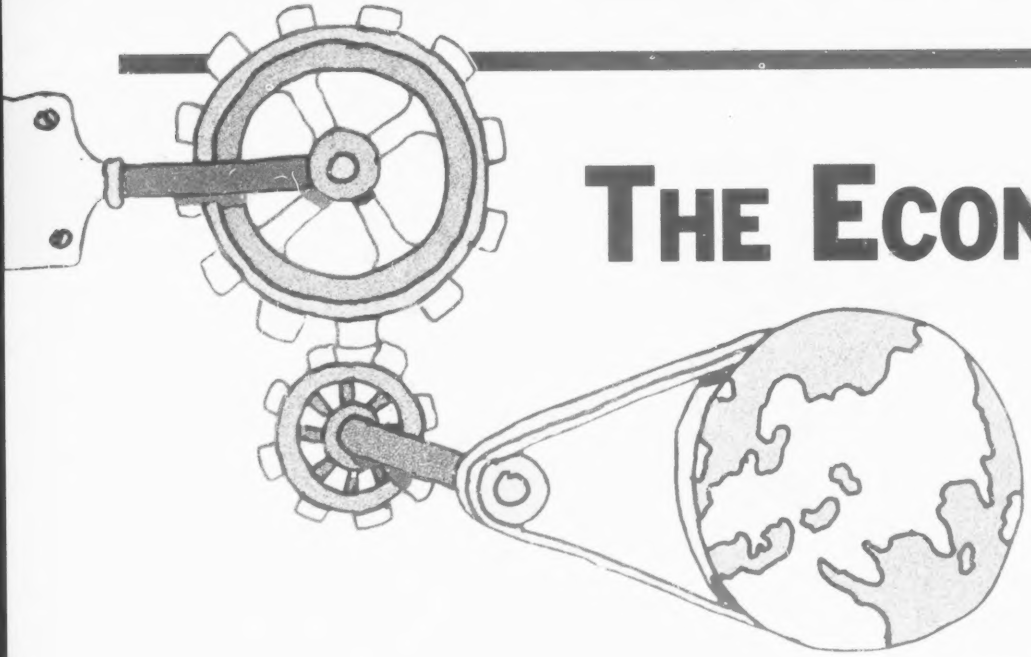
Trade friction reached a flash point. The U.S. labeled Japan, India, and Brazil unfair traders, and GATT complained that the U.S. was being a bully. Market forces swamped—at least for a while—efforts by finance ministers to keep the dollar from rising. As a result, the improvement in the U.S. current account deficit has slowed. But the dollar remains far below its 1985 peak. American exports continue to grow faster than imports, and the trade deficit should keep heading down for the rest of the year. While some critics worry that the world is shaping up into trade blocs that will stick mainly to themselves—the EC, North America, the Pacific Rim—global plans being made by managers everywhere tell a more optimistic story.

– Edward C. Baig

IN THIS SECTION:

- THE WORLD'S ECONOMIES 72
- THE TOP 25 COUNTRIES 76
- SURGING INVESTMENT 80
  - Stock Markets 84
  - Latin America 85
- TRADE PATTERNS 88
- COMPARISONS OF LIVING STANDARDS ... 92

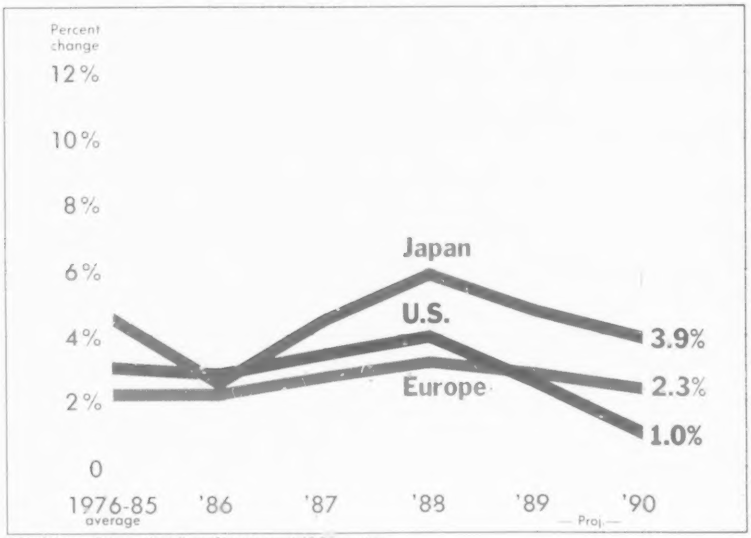
ILLUSTRATIONS BY SEYMOUR CHWAST



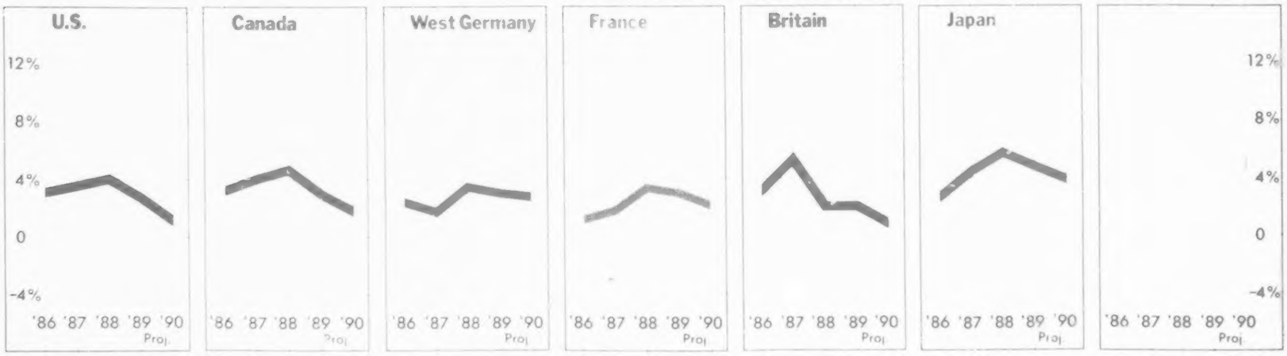
THE ECONOMIES

REAL GNP GROWTH

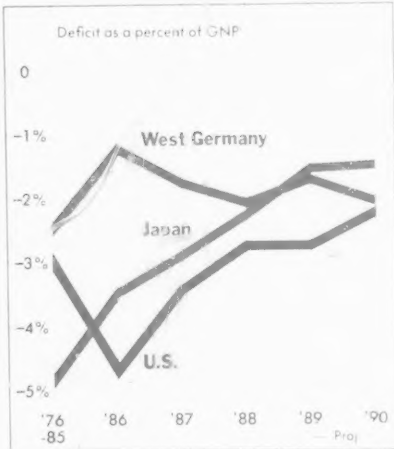
The global expansion is starting to ease. As a group, Asia's Little Dragons—Hong Kong, Singapore, South Korea, and Taiwan—remain the world's hotshots, but their growth will slow dramatically. The Korean rate will be shaved by more than half. Britain, which partied in 1987, appears headed for an economic hangover next year. Among developed and fast-developing countries, only Indonesia, which has attracted substantial new foreign investment, will boost its rate of expansion in both 1989 and 1990.



* South Korea, Taiwan, Hong Kong, Singapore. † 12 EC countries.

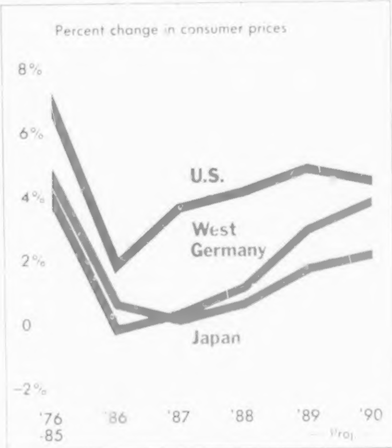


FIGURES SUPPLIED BY DATA RESOURCES



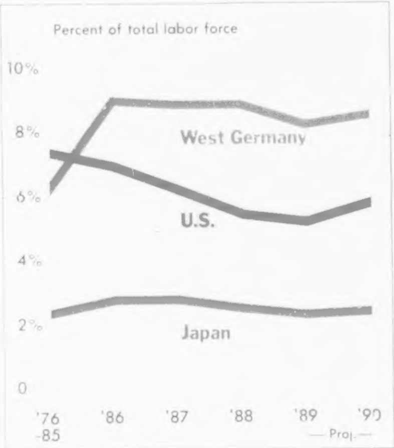
GOVERNMENT BUDGETS

Back from the brink: The U.S. budget deficit keeps shrinking, both as a percent of GNP and in absolute terms. West Germany could turn expansive.



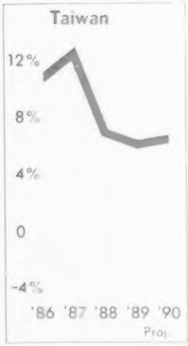
INFLATION

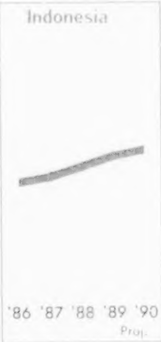
The expansion is still strong enough to generate inflationary steam. Even the West Germans and the Japanese are beginning to feel the heat.

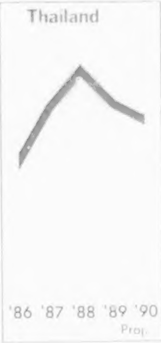


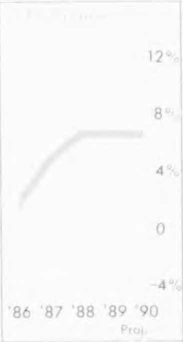
UNEMPLOYMENT

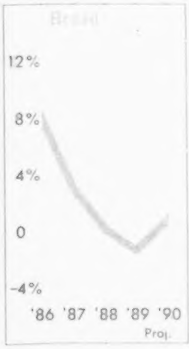
U.S. unemployment will inch up slightly next year but will probably not exceed 6%. West Germany's rate will hover around its seven-year low.

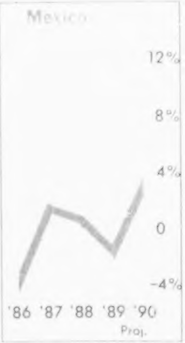


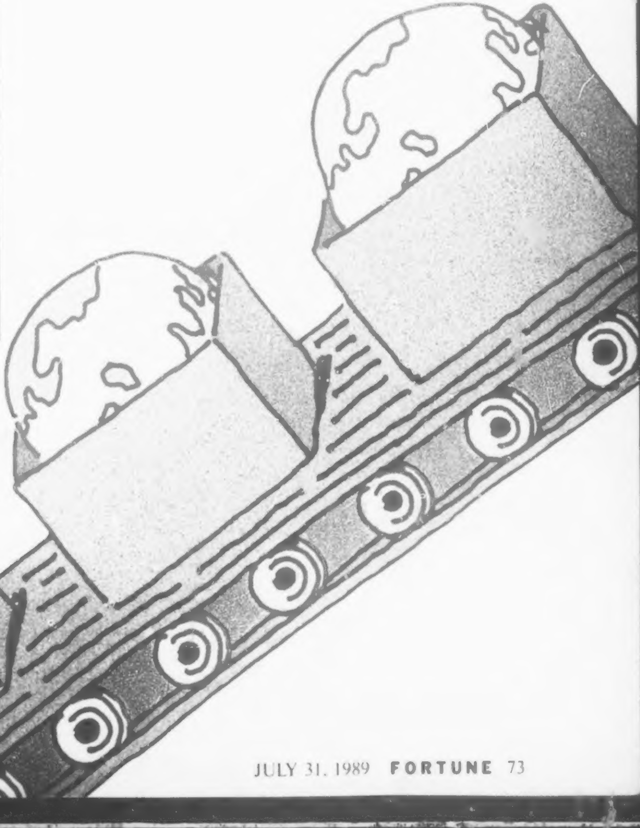












THE TOP 25 COUNTRIES

	1988 GDP in billions of U.S. dollars	POPULATION in millions	REAL GDP GROWTH avg. annual % change 1984-88
United States*	$4,864.3	246.5	3.4%
Japan*	$2,858.9	122.6	4.4%
West Germany*	$1,208.3	60.6	2.4%
France	$945.9	55.9	2.4%
Italy	$828.8	57.4	3.0%
Britain	$812.1	56.9	3.5%
Canada	$486.5	25.9	4.1%
Brazil	$384.6	144.5	4.8%
China	$370.6	1,085.3	10.6%
Spain	$342.3	39.0	3.8%
Iran	$338.4	52.9	−0.5%
India	$283.8	801.5	6.2%
Australia	$246.0	16.6	3.9%
Netherlands*	$230.2	14.7	2.2%
Switzerland	$184.8	6.6	3.0%
Mexico	$181.2	84.0	0.1%
Sweden	$178.5	8.4	2.0%
South Korea	$164.6	42.7	10.0%
Belgium*	$152.0	9.9	2.2%
Austria	$126.6	7.6	2.4%
Taiwan	$116.2	19.9	8.5%
Denmark	$107.8	5.1	1.7%
Finland	$104.2	4.9	3.5%
Norway	$88.1	4.2	2.9%
Saudi Arabia	$74.5	12.9	−1.6%

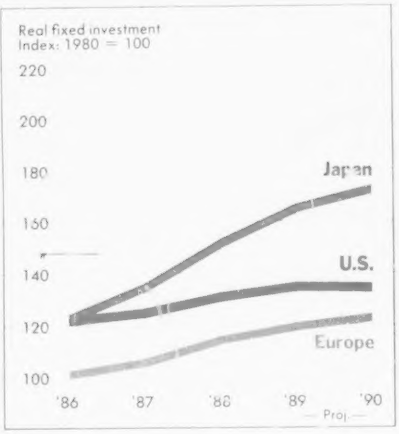
The U.S. still dwarfs Japan as the biggest economy in the world. The list excludes the Soviet Union and its allies because data are unreliable. China and India, the largest countries by population, are among the lowest in gross domestic product per capita.

*GNP

SURGING INVESTMENT

Investment fever is gripping the global village. Capital spending has been brisk around the world, especially among the Little Dragons and in Japan, Indonesia, and India. Led by electronics and machinery manufacturers, Japanese companies boosted plant and equipment purchases by 16% in 1988, the largest rate of increase since the end of World War II. Japanese investment is also helping to speed growth in such Southeast Asian countries as Thailand, Indonesia, and Malaysia.

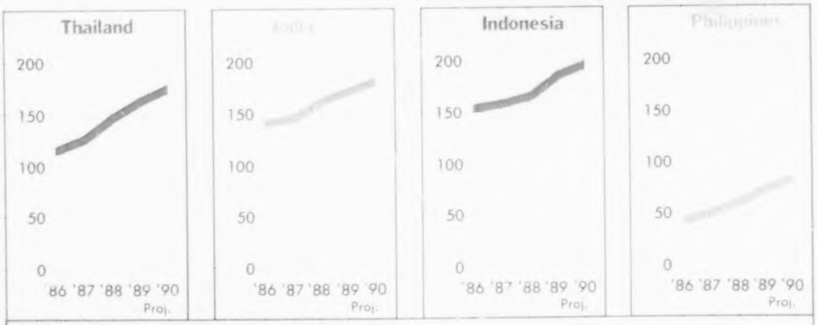
Money is pouring into developed countries, too, especially the U.S. Attracted by safety and stability, foreigners raised their direct investment in American businesses and property by $58 billion last year, bringing the total to $329 billion. That puts it ahead of U.S. direct investment abroad.



FIXED INVESTMENT AS A PERCENT OF GDP
Five-year average

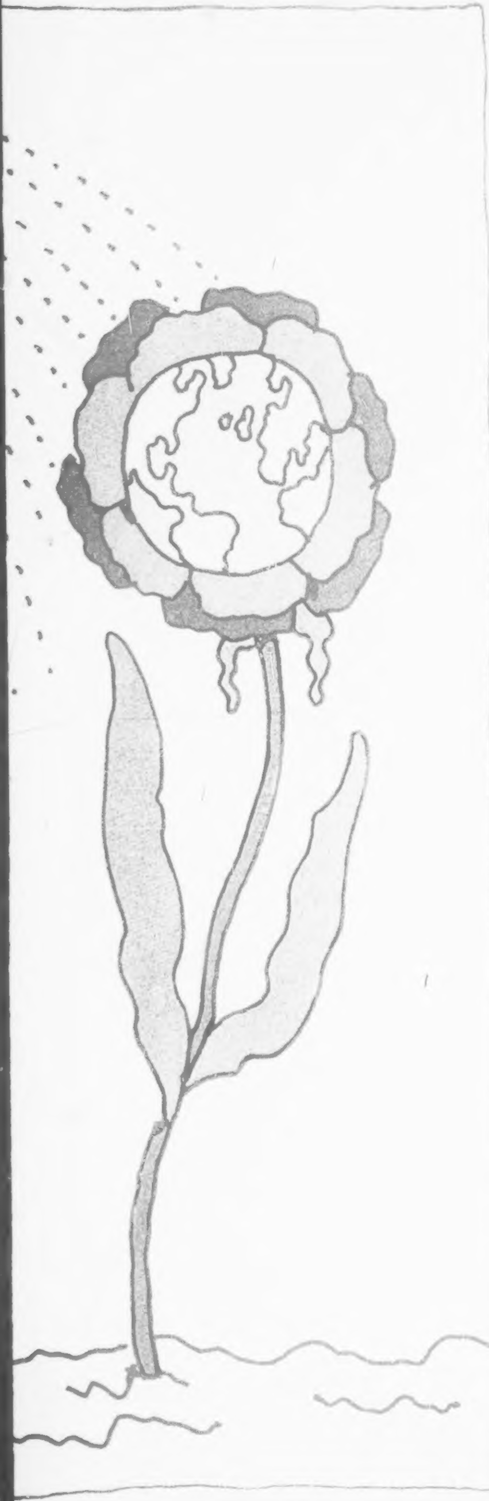
Japan*	29.9%
Indonesia	26.4%
Thailand	24.9%
India	21.4%
Europe	19.7%
Philippines	16.6%
United States*	14.8%

*GNP.



CAPITAL INVESTMENT

Rebounding from a period of low investment during the early 1980s, businesses are replacing plant and equipment and starting up real estate ventures with panache. Annual investment is up everywhere, but the biggest increases are in Asia.



$327 BILLION
Total U.S. investment abroad

COUNTRIES WHERE THE U.S. INVESTED MOST IN 1988

Canada	$61 billion
Britain	$48 billion
West Germany	$22 billion
[illegible]	[illegible]
[illegible]	[illegible]

$329 BILLION
Total foreign investment in the U.S.

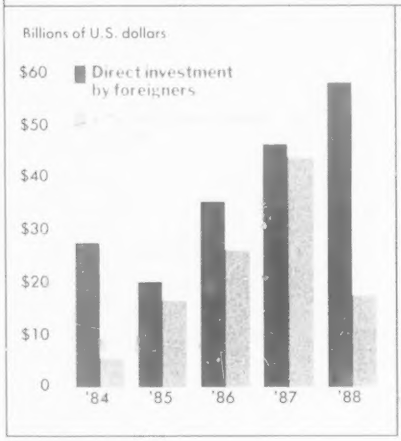
COUNTRIES WITH THE BIGGEST INVESTMENT IN THE U.S. IN 1988

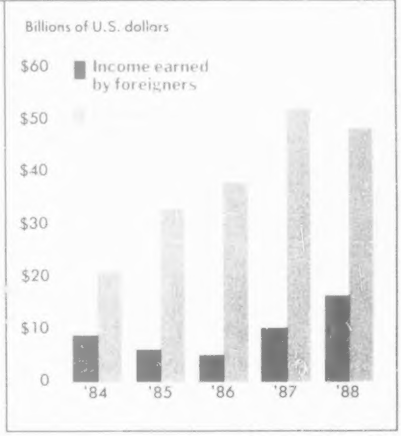
Britain	$102 billion
Japan	$53 billion
[illegible]	[illegible]
Canada	$27 billion
West Germany	$24 billion

SOURCE: COMMERCE DEPARTMENT

DIRECT INVESTMENT

Direct foreign investment in the U.S. outpaced American investment abroad by $41 billion in 1988; the year before, the difference was just $2.7 billion. But Americans still collect nearly three times the income from their properties.

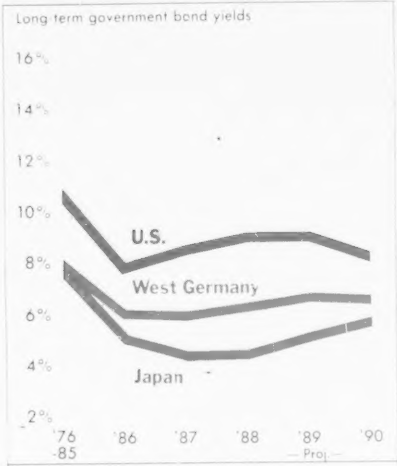




which totals $327 billion. The flow of American investment overseas slipped by $27 billion last year, even though the number of new foreign projects rose 18%, according to data compiled by the Conference Board. Western Europe attracted just over half these new ventures as U.S. companies sought to achieve solid positions in the Common Market before 1992.

Governments everywhere are trying to woo investors. Mexico now allows foreigners to own 100% of some businesses. Korea has been talking about loosening restrictions on capital from abroad. Seoul will no longer insist that foreign manufacturers export a significant portion of the goods they produce in Korea. Even the Soviet Union is setting up islands of capitalism—economic zones where Westerners can own plants in Mother Russia.

Financial markets reflect the global growth surge (page 84). Some 20 months after the Wall Street crash of October 1987 sent shock waves around the world, most foreign stock markets are performing vigorously. China's violent swing to the right, along with the regime's continuing campaign against reformers, knocked down share prices in Hong Kong but barely slowed the explosive growth of newly emerging markets in Taiwan and South Korea. The only major exchange below its level of a year ago is Sydney's, mainly because of rising interest rates.



INTEREST RATES

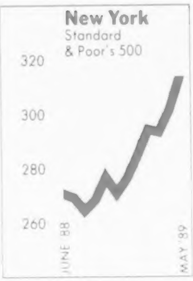
Interest rates are up, though well below historic peaks. Long-term rates have risen less than short-term rates.

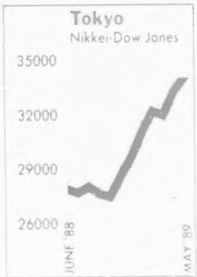
*Bank lending rate

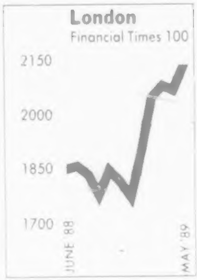
STOCK MARKETS

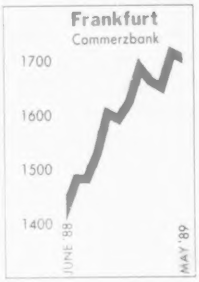
Most of the world's busiest stock exchanges turned in performances last year that made Black Monday a distant memory. On all the major markets save Sydney, prices pretty much moved up in unison. Brazil's market grew fastest, due mainly to inflation, but tumbled in June when a big investor defaulted.

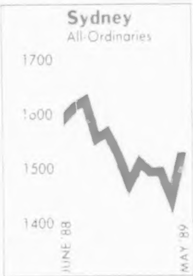
DEVELOPED MARKETS	MARKET CAPITALIZATION April 1989 in billions	ANNUAL GROWTH 1983-88
Japan	$3783.9	47.6%
United States	$2709.0	8.0%
Britain	$771.3	27.9%
West Germany	$241.0	25.0%
Australia	$125.9	25.2%
Hong Kong	$86.8	34.2%
EMERGING MARKETS		
Taiwan	$175.3	73.7%
Brazil	$62.1	16.3%
Malaysia	$28.8	0.5%
Mexico	$28.4	51.1%

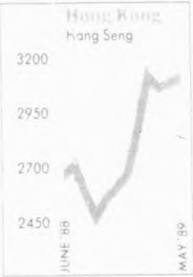


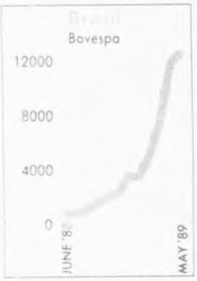


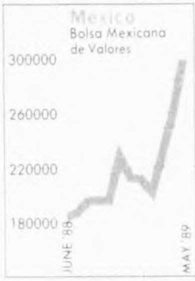


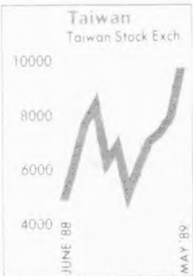


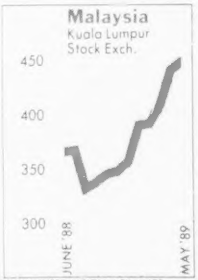




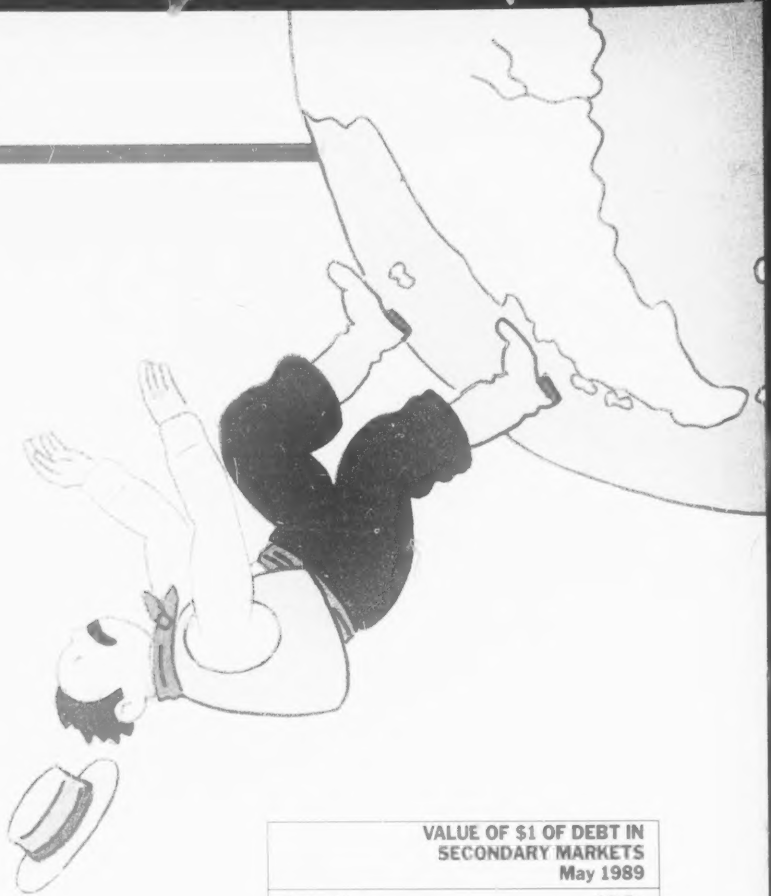






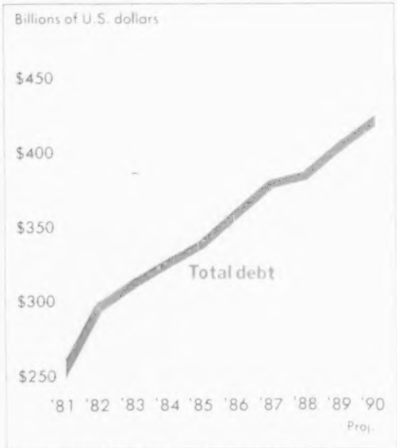


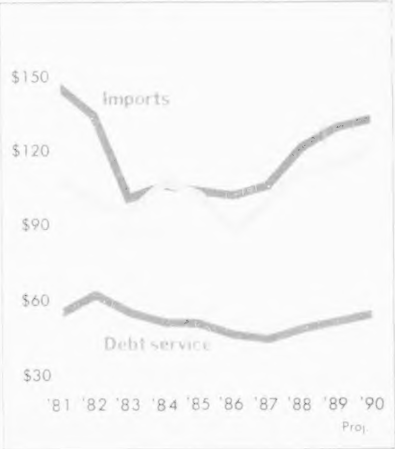
STOCK MARKET INFORMATION SUPPLIED IN PART BY INTERNATIONAL FINANCE CORP. AND MORGAN STANLEY CAPITAL INTERNATIONAL PERSPECTIVE.



LATIN AMERICA

The price of economic mismanagement haunts the continent. In many countries GDP per capita and investment are below what they were when the decade started. The economies of Argentina and Peru have collapsed, and Brazil is teetering dangerously on the brink. Inflation in all three countries is at Weimar Republic levels. Total Latin debt has accelerated past $400 billion. Only a fraction is ever likely to be repaid: $1 of Latin debt is worth mere pocket change in lightly traded secondary markets. The debt-reduction plan put forward earlier this year by U.S. Treasury Secretary Nicholas Brady provides a framework for banks and debtor nations to settle realistically, but it's off to a shaky start. Signs of hope? President Carlos Salinas de Gortari is Mexico's most vigorous economic and political reformer yet.





Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, Venezuela

	VALUE OF $1 OF DEBT IN SECONDARY MARKETS May 1989
Argentina	12.5¢
Brazil	32.0¢
Chile	60.0¢
Mexico	40.0¢
Peru	4.0¢
Venezuela	37.0¢

SOURCE: SWAPS—THE INTRADOS GROUP

	GDP PER CAPITA 1989 as a % of 1980
Argentina	42.9
Brazil	117.7
Chile	71.9
Mexico	83.5
Peru	88.2
Venezuela	71.9

	CAPITAL INVESTMENT 1989 as a % of 1980
Argentina	26.5
Brazil	103.4
Chile	88.3
Mexico	73.4
Peru	78.2
Venezuela	64.4

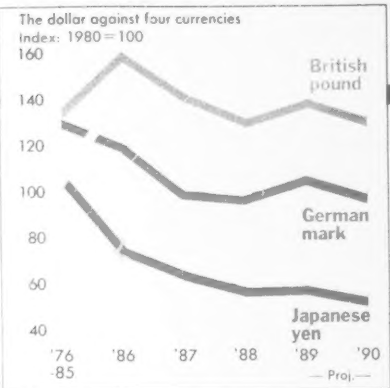
SHIFTING TRADE PATTERNS

Worldwide trading partners are squabbling. That's hardly new, but the mood in America has turned particularly truculent. In May the U.S. designated Japan, India, and Brazil as unfair traders under the so-called Super 301 provision of the 1988 Trade Act. Despite the bickering, world trade expanded by about 9% in 1988—the strongest showing in the 1980s.

America, the world's biggest importer, sold more goods abroad than the year before, and exports rose faster than imports. A weaker dollar gets some of the credit, but U.S. industry has also made itself more competitive. One sign: American unit labor costs are expected to increase more slowly than those of West Germany and Japan, even without help from the relatively weak dollar.

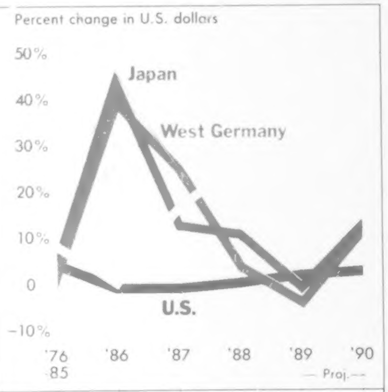
The U.S. export surge lopped a nice chunk off America's still enormous trade deficit, now about $120 billion on an annualized basis. In this investment-charged environment, FORTUNE expects foreigners to continue craving U.S. products, especially capital equipment.

Exporters in Japan and Germany have been losing market share to the U.S. and to Asia's Little Dragons. America reduced its current accounts deficit by about $17 billion during 1988, although progress in the first half of this year was tempered by the dollar's rise.



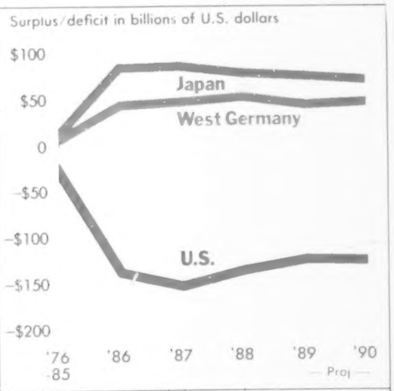
THE DOLLAR

The dollar's vigorous spring rally overshadowed the fundamentals. It is still far below its 1985 peak.



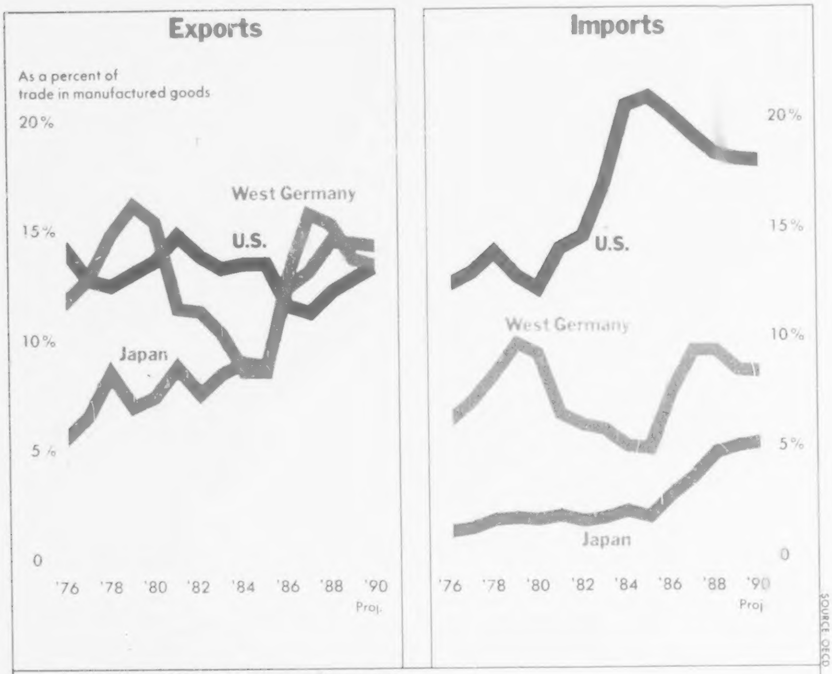
UNIT LABOR COSTS

In 1990, U.S. labor costs are expected to rise at a rate less than Japan's and West Germany's.



CURRENT ACCOUNTS

Even strong U.S. exports will only gradually whittle away America's current accounts deficit.



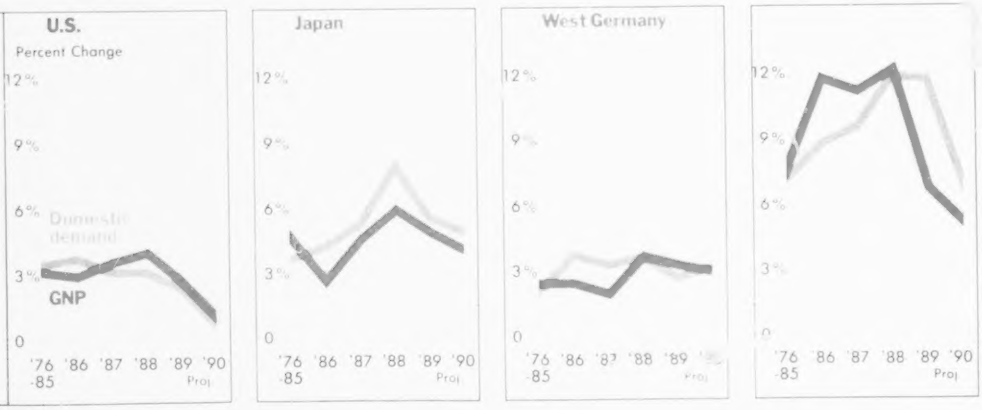
SOURCE: OECD

SHARES OF WORLD TRADE

The U.S. accounted for roughly a third of the rapid increase in trade last year (measured in current dollars). America's share of exports rose by a full percentage point, while imports slipped a point. The Little Dragons keep playing bigger roles.

TOTAL OUTPUT VS. DOMESTIC DEMAND

Domestic demand in Japan grew a full two percentage points faster than GNP in 1988, and the Japanese scooped up imports. In the U.S., strong exports are keeping GNP growing ahead of demand.



		Bangkok	Frankfurt	Hong Kong	London	New York	Paris	Sao Paulo	Seoul	Tokyo
COSTS	Apartment rent 3 rooms, per month	$950	$496	$2,136	$1,244	$1,680	$966	$1,365	$1,694	$6,123
	Color TV	$636	$550	$356	$820	$577	$1,079	$528	$859	$1,427
	Business suit	$212	$275	$214	$303	$352	$260	$488	$240	$536
	One dozen eggs	$.79	$1.99	$1.04	$2.32	$1.15	$2.24	$.83	$1.05	$1.43
	Gasoline 1 liter	$.36	$.54	$.60	$.69	$.36	$.80	$.70	$.91	$1.06
	Hairdresser Ladies	$1.90	$18.20	$8.60	$20.80	$32.90	$23.20	$18.70	$14.00	$29.80
	Taxi fare 5 km	$1.83	$7.71	$2.85	$10.44	$8.12	$4.91	$4.70	$1.82	$9.11
EARNINGS	Bus driver									
	After-tax earnings	$2,971	$15,658	$11,119	$15,764	$20,959	$15,967	$4,207	$9,404	$25,049
	Hours worked	2,731	1,915	3,018	1,841	1,916	1,841	2,346	3,110	2,175
	Department manager									
	After-tax earnings	$10,769	$46,773	$30,878	$26,127	$37,303	$20,885	$5,871	$17,663	$52,741
	Hours worked	2,428	1,909	2,486	1,792	1,995	1,814	2,149	2.312	2,114

SOURCE: UNION BANK OF SWITZERLAND

A SNAPSHOT OF LIVING STANDARDS

What's the most expensive city in the world? Probably Tokyo, where the monthly rent for a medium-priced unfurnished three-room apartment is greater than the *annual* pay for a bus driver in São Paulo. Even so, it will cost more to get your hair done in New York and to ride a taxi in London. In general, Asians work longer hours than Europeans or Americans do for no relative increase in pay. The prices in this comparison were based on exchange rates on March 23, 1989. ☐

Weekend warriors—like these at Phoenix's Luke Air Force base—cost $15,000 each a year. An experienced Air Force pilot's pay: $50,000.

HOW BIG A MILITARY DOES THE U.S. NEED?

With the cold war cooling, the Pentagon budget could be cut by a third without weakening defense. Think what America could do with the extra $100 billion a year.

■ *by Lee Smith*

UNTIL RECENTLY, following conventional arms talks between the U.S. and the Soviet Union had all the excitement of watching rocks in no man's land. Nothing happens. Now the exchanges are fast and fascinating. General Secretary Gorbachev offers to withdraw thousands of tanks and troops from Europe. President Bush counters with a proposal to limit the size of the superpower armies.

For 40 years the tension in central Europe has largely determined the contours of America's armed forces. If the superpowers do agree to pull back, how should the U.S. shape its military? How big an Army, Navy, and Air Force will the U.S. need a decade from now? Or how small?

Still deep in negotiations with the Soviets, American officials such as Defense Secretary Richard Cheney don't want to talk about goals for the year 2000. But experts outside the Defense Department—former Pentagon officials and retired generals among them—can stand on the high ground apart from the smoke and din. What they see is a chance for victory all around, an opportunity to maintain national security and at the same time strengthen the American economy. The U.S. military budget, about $300 billion this year, could be reduced by perhaps a third by the year 2000.

An extra $100 billion a year could settle a lot of America's unpaid bills. If that money were available immediately, for example, it could almost liquidate the budget deficit, or go a long way toward settling the S&L's debts, or pay to make life better for Americans in myriad ways. But the most important question is whether pulling that much out of the defense budget would seri-

PHOTOGRAPH BY ALAN D. LEVENSON

ously weaken the ability of the U.S. to protect itself and its friends.

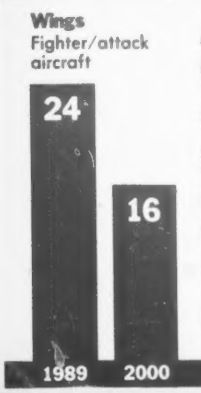
Many authorities insist it will not, former Defense Secretary Robert McNamara among them. "Security is the top priority of the nation, and we can afford whatever we need," he says. "But the fact is that we are spending more than we have to." McNamara believes that, with continued progress in East-West arms talks, the budget could be sliced by $150 billion in six to eight years. That's somewhat deeper and faster than other experts think is feasible: A $100 billion cut by 2000 is ambitious enough.

If $100 billion dollars were yanked out of the U.S. economy suddenly, it could bring on a recession. A scaled decrease in military spending over a decade is more palatable, both politically and economically. Says economist Murray Weidenbaum, who specializes in defense issues: "When you pull down your guard with the Soviets, you do it gradually." FORTUNE economists think the economy could handle a $30-billion-a-year decrease in federal outlays without a convulsion, so the average annual decline of $10 billion over ten years that this article proposes should not play havoc. Still, says Weidenbaum, regions that depend heavily on defense contracts, such as Dallas–Fort Worth, Los Angeles, and St. Louis, would almost certainly go though painful transitions.

A one-third reduction—to a spending limit of $200 billion a year in 1989 dollars—might seem too much of a diet for the muscle-bound military to undertake. But in most of the past 40 years, except during the Korean and Vietnam wars, the Defense Department has not spent much more than that. From 1973 to 1980, outlays averaged $206 billion in 1989 dollars.

Granted, no one who cares about security wants to repeat the Seventies. Pay dropped so low that the Pentagon had to fill out its ranks with labor force leftovers. Ships and planes in likely combat zones would have run out of ammunition in a few days of fighting. Ronald Reagan won the 1980 election partly by campaigning against what critics called the "hollow force." Once in office, he used better pay and a renewed spirit of patriotism to attract smarter soldiers; then he got the money from Congress to make them ready to fight.

Edward Luttwak, a scholar at the Center for Strategic and International Studies, argues that it's okay to let readiness slip. Keep a few elite units fit and let the rest take it easy. "The trouble with readiness is that it's like fresh flowers," he says. "It has to be replenished every day." He would rather spend the money on research, seeds that will grow the mighty weapons of the future.

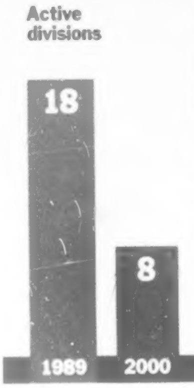


AIR FORCE: Fewer troops mean fewer planes. Giving three wings to the reserves would save millions.

NICE IMAGERY but not convincing. "The trouble with Luttwak's army is that nobody would want to be in it," says Lawrence Korb, an assistant secretary of defense under Reagan and now director of the Center for Public Policy Education at the Brookings Institution. Professional soldiers do not want to sit in the barracks. They want to shoot guns, fly planes.

Another frequently proposed way to shrink military spending is to reform procurement. Clearly the Pentagon should be more frugal and buy wrenches, motors, and other routine supplies off the shelf rather than having them custom made at high prices. It should also stop trying to rush avant-garde technology into production no matter what the cost.

The Stealth, or B-2, bomber designed by Northrop to baffle radar is a prime example of such extravagance. Robert Costello, who recently resigned as assistant secretary of defense for acquisition, says the Stealth program is so poorly managed and costs are so out of control that it ought to be junked. The projected price of 132 planes is $70 billion, or over $500 million each, which makes Republican Senator John McCain of Arizona, a former Navy pilot, wonder if anyone would fly one. He says, "If you have to bail out, you'll spend the rest of your life doing the paperwork."



ARMY: Divisions in Europe and Korea could be cut. The work of five other divisions could go to the Marines.

Each GI in Germany costs $50,000.

The plane might be worth that risk and money if it could carry out vital missions that a missile or a B1-B bomber could not. But the special role the Pentagon seems to have in mind for the planes is to chase down Soviet mobile missiles while they are being hauled around the countryside, a task so narrow and chancy it doesn't justify the price.

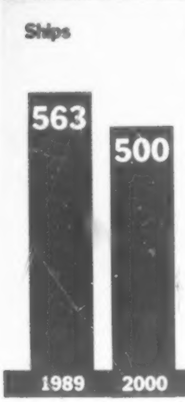
Though there is no reason for a crash production program, FORTUNE doesn't propose to deep-six the Stealth entirely. In Washington a bad idea is hard to stop once it gets rolling. Besides, killing the plane and a few other luxuries would not go all that far toward pushing the budget down to the $200 billion mark.

Many analysts have concluded that the surest and safest way to slash the budget is to cut the size of the military. The rough dimensions of the force structure, as Pentagon jargon puts it, are the Army's 18 divi-

REPORTER ASSOCIATE *Jennifer Reese*

sions (1989 cost: about $80 billion), the Air Force's 24 wings of tactical fighters (about $85 billion), the Navy's 563 ships (about $95 billion), and the delivery system for 13,000 or so strategic nuclear weapons (about $40 billion).

The cuts would leave the U.S. with a smaller force but one that could be just as effective. While the Pentagon strategy in the Fifties and Sixties was based on being able to fight two and a half wars (in Europe, the Pacific, and one minor conflict), current military thinking seems to focus on fighting a big war in Europe and skirmishes elsewhere. The greatest danger to the military is being too *big* for its task, according to retired general Andrew J. Goodpaster, former Supreme Allied Commander in Europe. Says he: "It would lose the respect and support of the people, and in a democracy you cannot do that."



NAVY: Instead of constantly patrolling distant oceans, ships should be used selectively for periodic displays of power.

The military employs 2.1 million men and women in uniform and 1.1 million civilians full time, with jobs as varied as installing air conditioners and auditing Stealth contracts. They are backed up by 1.6 million reservists, most of whom spend a weekend a month plus two weeks a year on duty. Labor costs amount to about $150 billion a year, half the military budget, in pay, training, housing, transportation, health care, children's schooling, and pensions, which alone come to $20 billion a year.

How much of that force structure will the U.S. need a decade from now? The answer depends on how substantially the Soviets reduce their military establishment and what menaces emerge elsewhere in the world.

Gorbachev has offered to eliminate 10,000 tanks from the convoy of 40,000 that are within a few days' roll of West Germany. He would also pull back into the Soviet Union 50,000 of the 600,000 troops in Eastern Europe. Bush's response: Both the U.S. and the U.S.S.R. should reduce their troops in Europe to 275,000 each, or about 30,000 fewer than the current U.S. force. That could save as much as $1.5 billion a year, because the 30,000 slots would be removed from the services and not simply transferred back to posts at home.

Goodpaster thinks both sides could conceivably agree to a gradual decrease to about 150,000 troops each in Europe by the mid-1990s. That would also mean a corresponding decline in tanks, planes, and other heavy metal. If American troops left on a carefully worked out timetable, Europeans, understandably jittery about their security, would probably not feel threatened. No military magic attends the 150,000 figure, but it is about half the present U.S. force.

The overall Army headcount could be reduced by as much as 50%, and the Air Force, Navy, and Marines about 20% each. If the number of civilians supporting the troops were sliced proportionately, the full-time work force could be reduced from 3.2 million to perhaps as low as 2.2 million. Cutting the active-duty work force by about a third ought to eventually reduce personnel costs by the same fraction, $50 billion a year. The Reserves, which account for only 6% of manpower costs, would not be touched.

Amazing though it may seem, a reduction would actually help maintain the quality of the forces. The pool of young men and women from 18 to 21, the prime source of recruits, has been shrinking for several years, and the trend will continue until the mid-1990s. One way to keep the standards high is to lower the number of openings.

Fewer troops need fewer weapons. Leonard Sullivan Jr., a Pentagon official in the Nixon Administration and now a defense consultant, calculates the replacement value of the U.S. arsenal at $2.5 trillion, including 45-year-old battleships as well as newly arrived cruise missiles. The Pentagon will spend $80 billion on procurement in 1989. At that rate the inventory would be replaced every 31 years.

"GIVE AWAY A third of the arsenal to allies," says Sullivan, the new hardware along with the old. Though that may sound like demented generosity, it would depart from tradition only in scale. The U.S. sends Israel almost $2 billion in military aid every year, for example, and supplies Afghan guerrillas with Stinger missiles. More than a third of the U.S. arsenal is either in Europe already or tagged for its defense. "The Germans have a lot of reservists and not enough weapons," Sullivan points out. "The Spaniards are asking us to take 72 planes out of Madrid. Instead of having NATO build a base for them in Italy, we should give the planes to the Italian air force." That would seem a relatively painless way to encourage the Europeans to

An aircraft carrier travels with an expensive retinue—as many as 18 support ships.

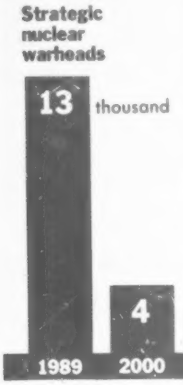
take more responsibility for their own defense, what Democratic Congresswoman Patricia Schroeder and others call burden sharing.

In any case the U.S. ought to drop the inventory to $1.6 trillion, which by Sullivan's accounting could be renewed every 31 years with an annual procurement budget of around $50 billion. For every $2 the U.S. devotes to procurement, it spends about $1 on research. By that formula the research budget could be pared from $37 billion this year to $23 billion. So the savings—$30 billion in procurement, $14 billion in research, together with $50 billion in payroll—is not far from the $100 billion target.

The math is a bit rough and ready, but the bottom line matches quite closely the calculations of experts who prune the force structure branch by branch. To get an idea of what a minimum military might look like, FORTUNE consulted more than 20 experts, relying in particular on several at Brookings.

AMES LONG ASSOCIATES—BLACK STAR

Both superpowers might feel safer if multiwarhead missiles, like this MX, were banned.



WEAPONS: Even after a huge reduction, the U.S. would have two warheads for every Soviet target.

Since the 1960s, Brookings has been thought of as a shelter for liberal Democrats inclined to be dovish on military issues. The institution is more complex. The Brookings scholars interviewed for this article were Korb, a top official in Reagan's Pentagon, William W. Kaufmann, a onetime MIT professor who has analyzed military budgets for three decades, and John Steinbruner, a liberal Democrat who is an authority on strategic arms issues.

Their assumptions, moreover, were tested against those of other authorities. FORTUNE concludes that the outlays for an effective Army, Navy, Air Force, and strategic weapons system could be reduced to about $185 billion (in 1989 dollars) by the year 2000. An additional $20 billion in pensions would bring the total to $205 billion.

■ **Army (total outlays in the year 2000: $40 billion).** The Army's 18 active-duty divisions could be sliced in half. A division consists of only 17,000 or so soldiers. But the nearly five divisions currently in Europe need so much support—from truck drivers to chaplains—that they require a total Army presence of 214,000, not counting almost as many dependents. Says Sullivan: "There is no more expensive way of guarding a foreign border than doing it with Americans."

If a treaty pushed the Soviets back from the border, the U.S. might be able to trim to two divisions in Europe and lower their support in the U.S. from five divisions to four. That balance would make the generals more comfortable than the present 1-to-1 ratio because they could rotate troops more often. Says General Edward C. Meyer, Army chief of staff from 1979 to 1983: "We may have a higher percentage of combat soldiers abroad for a longer time than anyone since the Roman Empire. That makes it hard to retain good people. They don't want to be away from home that long."

A division without dependents helps protect the demilitarized zone in Korea. And another stands ready in the U.S. to replace it. The South Koreans may already be strong enough to single-handedly repel an invasion from the North, says retired colonel William Taylor, former director of National Security Studies at West Point and now a scholar at the Center for Strategic and International Studies. Even though the army of the North outnumbers that of the South by about 840,000 to 630,000, Seoul has superior arms—American planes as well as domestically made tanks. The U.S. can gradually pull its force out of Korea and at the same time eliminate the stateside backup division.

The rest of the Army is made up of two airborne and five lightly equipped ground divisions—troops that can be quickly transported with rifle and toothbrush just about anywhere. But it is hard to imagine where the Pentagon would want to send that many troops all at once. Iran? "The Soviets aren't going into Iran, and neither are we," says Korb. The Philippines? Even if the U.S. wanted to dispatch all those troops in a hurry, it wouldn't have enough planes and ships to supply them. A soldier in battle shoots, eats, and otherwise consumes his own weight every day.

The Army should keep the two airborne divisions for emergencies—the Pentagon rushed 2,000 additional troops to Panama in May to reinforce the brigade of 10,300 protecting the Canal Zone. But the Army should declare the five other divisions surplus. If the Army needs help, it can call on the Marines, which will have three full divisions even after a 20% cut in their ranks.

■ **Air Force (total outlays in the year 2000: $50 billion).** This military branch has 24 wings of fighter-attack aircraft, generally 72 planes to a wing, on active duty. As the U.S. pulls soldiers out of Europe and Korea, the Air Force could eliminate at least eight wings: four in Europe (out of nine), the two in Korea, and two in the U.S. that back up the force overseas. Another $500 million or so could be saved by turning three U.S.-based wings over to reservists, who operate a dozen wings of their own.

About half the reservists are former mili-

THE
PENINSULA
NEW YORK

GRACIOUS

ACCOMMODATION

IS

INDEED

ALIVE

AND WELL

IN

NEW YORK

CITY

*A truly great hotel
in the city's greatest location*

Fifth Avenue and 55th Street

The Peninsula, New York
Toll Free:(800)262-9467

The Leading Hotels of the World
The Leading Hotels of The World
Toll Free:(800)223-6800

Preferred Hotels
Preferred Hotels Worldwide
Toll Free:(800)323-7500

SRS
Steigenberger Reservation Service
Toll Free:(800)223-5652

THE PENINSULA
NEW YORK

THE
PENINSULA
GROUP

Defense Secretary Richard Cheney

tary pilots who now fly commercially. On average they are in their late 30s, have flown military planes for more than 3,000 hours, compared with 1,800 hours for active-duty pilots, and generally perform at least as well in training exercises. A reserve pilot from Ogden, Utah, Danny Hamilton, won the last all–Air Force top-gun shootout. An experienced active-duty pilot costs an average of $50,000 a year in pay and benefits; a reserve pilot who trains 100 days, about $15,000. Nonetheless, reserve wings are only 20% less expensive to run, because the planes and the full-time mechanics are no cheaper.

■ **Navy (total outlays in the year 2000: $70 billion).** The Navy now has 563 ships, short of the 600-ship goal of the Reagan Administration. A more sensible target would be 500 ships. The Navy would still be the world's most powerful fleet, as it should be. If the decade ahead is, as many military experts expect, one of small wars erupting sporadically around the world, the Navy will be able to dispatch planes over North Africa, bombard a recalcitrant fortress in the Persian Gulf, or land a brigade of Marines on a beach in Southeast Asia.

With fewer troops to protect, the Navy could safely reduce by 30 the number of frigates and other escorts for convoys. It should also give up its attempt to keep ships on constant patrol in distant oceans, a strain on craft and even more on crews. Instead the Navy should keep much of the fleet in home waters. Says Kaufmann: "The ships should go out randomly and in force, a much more impressive demonstration of power than having one or two ships everywhere." On that kind of schedule, the Navy would not need the present 14 aircraft carrier groups, each a flotilla of as many as 19 ships. A dozen would be plenty.

■ **Strategic forces (total outlays in the year 2000: $25 billion).** The U.S. has 13,000 or so nuclear warheads (excluding 10,000 tactical weapons) and the Soviets about 11,000. Says Steinbruner: "There aren't more than 2,000 targets in the Soviet Union you can usefully attack." He suggests dropping the limit on warheads for both sides to 3,000. Kaufmann, convincingly cautious, would keep 4,000.

The ICBMs now in place—Minutemen with one or three warheads and MXs with up to ten bombs each—sit in silos in the Great Plains, vulnerable to accurate, multiwarhead Soviet missiles. So the Pentagon is going ahead with three expensive alternatives for protection: scattering 50 MX missiles on railway cars in an alert (estimated total cost: $5.8 billion); running 500 Midgetmen missiles around in trucks ($24 billion); and the Strategic Defense Initiative, whose object seems to have shifted away from building a shield over the whole country to providing guard dogs to keep incoming missiles away from the ICBMs.

The Pentagon could abandon all three methods in favor of 500 or so single-warhead missiles in silos, 3,500 other warheads apportioned among the Navy's Trident submarines and the Air Force's B1-B bombers, and a treaty with the Soviets. Under such a treaty both superpowers would eliminate all multiwarhead missiles accurate enough to vaporize the other side's ICBMs. And if the Soviets cheat and tuck some silo-busters away? They would also have to figure out a way to simultaneously destroy the submarines, whose missiles can hit Soviet cities, and bombers, which could either penetrate Soviet airspace or fire cruise missiles from afar.

Gorbachev could fall and be replaced by a bellicose regime that would fire up the tank factories and march the troops back into Eastern Europe. That's why the U.S. should only match Soviet reductions, step by measured step. Policies don't necessarily last forever. But for a time the price of being a superpower could be somewhat more affordable. And America has better things to do with the money. F

SEEKING BIG MONEY IN PAPER AND PENS

Three new retail chains want to be the Toys "R" Us of the office supply industry. Huge selections and bargain prices make for fast growth.

■ *by Susan Caminiti*

TRY TO GUESS how much those paper clips, interoffice envelopes, and manila folders that disappear so quickly from the supply closet actually cost. Nope, try again. According to the National Office Products Association—yes, there is one—the average office employee uses $500 worth of supplies each year. Multiply that by 50, 60, or 100 workers. Now pay attention to those No. 2 pencils, rubber bands, and Post-it pads.

That's just what three fast-off-the-mark discount merchants are doing. The retailers—Staples, Office Depot, and Office Club—are taking aim at small and medium-size businesses, which often buy their supplies at retail. In the process the discounters are redefining the office products industry. They get their goods directly from manufacturers, not middlemen, and pass the cost savings along to their customers.

In warehouselike superstores the merchants stock up to 7,000 items, ranging from copy paper and fax machines to tea bags and microwave ovens. Customers stroll down aisles pushing shopping carts, just as at the grocery store, plucking electric pencil sharpeners and calculators off huge floor-to-ceiling shelves. The look is plain pipe rack, but no one comes for the décor. The attraction is prices that are 20% to 75% lower than the manufacturers' suggested ones. Those legal pads that set you back $16 a dozen? Here they are as low as $4.

This year the office products industry, which embraces computers and office furniture as well as pencils and paper, will likely do over $100 billion at retail, according to the National Office Products Association. The discount supermarkets—the first opened three years ago—have only a fraction of this huge market. But Montgomery Securities analyst Bo Cheadle estimates that these warehouses, which are similar to Toys "R" Us stores, will be the fastest-growing segment in specialty retail-

NINA BARNETT

Packing up a customer's telephone order at a Staples outlet in Springfield, New Jersey

300,000 ITEMS IN STOCK
FEATURING 7,000 PRODUCTS!
WE'LL BEAT THEIR PRICE BY 10%!
DELIVERY TRUCKS WIT COURTEOUS DRIVERS READY TO DELIVER YOUR PURCHASES FOR A MINIMAL FEE!

WILL VAN OVERBEEK

Comparison shopping—of calculators, no less—at an Office Depot store in Austin, Texas

ing over the next several years. Says Thomas Stemberg, the CEO of Staples, based in Newton, Massachusetts: "If you were looking for a big, growing industry that could benefit from modern distribution techniques, this is the one."

Because the business is so young, only one of the three outlets has been profitable for a full year: Office Depot of Boca Raton, Florida (see chart). Chief Executive David Fuente oversees 39 stores in the South and plans to increase that number to an ambitious 65 by year-end. Office Club, a 21-store chain with headquarters in Concord, California, is blanketing the West Coast. Staples operates 27 stores in the Northeast and recently set up shop in Ohio.

> **"Customers usually pick only from the first six feet of space. So we use the area above as our warehouse."**

For now, each chain is tending its corner of the country. But as these stores saturate their home territories they are likely to start invading one another's turf. Stemberg, for one, welcomes the challenge: "The store with the best prices, best selection, and the most helpful service will survive."

EACH DISCOUNT office supply store offers its own membership card. To qualify, a shopper just fills out a short form including the size and type of his business. Membership privileges range from lower prices on a select group of fast-moving goods to speedier check approval at the register. What's in it for the stores? File cabinets full of information on the buying habits of shoppers. Office Club's 150,000 members are grouped by zip code so headquarters can tell which items sell best in, say, San Diego or Silicon Valley, and be sure the stores there are in stock. The California retailer makes the card a profitable concept in more ways than one: It alone charges for membership. The fees—$10 for a normal membership, $50 for a deluxe card with phone ordering and charge privileges—added up to $1.1 million last year.

Staples, which Stemberg launched in 1986, is the industry pioneer. Intrigued by how much money wholesale clubs were able to generate from their small selection of office supplies, Stemberg began asking his friends who owned small businesses what they paid for their pads and paper clips. As he suspected, the prices were close to full retail. When he posed as a purchasing agent trying to negotiate discounts from dealers, he found them unwilling to give more than a 20% price break. Says Stemberg: "The opportunity for this business became quite obvious."

With brightly lit stores carrying 5,000 items, Staples generates an average of $500 in sales per square foot. Rents are high in the Northeast, averaging $18 to $19 a square foot. Thus, Staples' central distribution center in Putnam, Connecticut, permits it to operate smaller stores (average: 16,000 square feet) than competitors that use their space as both warehouse and shop.

One of the staples at Staples is a 112-page catalogue of all its products, which it mails to customers about four times a year. The company takes phone orders and charges a small fee for deliveries. But Stemberg is finding that about 90% of sales come from shoppers who cart the stuff themselves.

Each Office Depot outlet sells an average of $150,000 worth of supplies a week. Stores take deliveries from manufacturers and display the merchandise on 12-foot steel shelves. Says CEO Fuente: "Customers pick only from the first six feet of space anyway. So we use the area above as our warehouse." Because his stores are located in the South, where rent is a relatively cheap $8 a square foot, Fuente is able to build stores as large as 27,000 square feet, about half the size of a football field. Like Staples, Office Depot runs a mail-order operation.

OFFICE CLUB has a narrower range of products than the other two chains—its stores offer only 2,200 items. Explains CEO Mark Begelman: "Instead of carrying file folders in packages of 25, 50, and 100, we carry only the 50s." Sales don't suffer—each club averages $458 a square foot—because customer shopping patterns show that 85% of Office Club sales are coming from only 650 items. The hottest seller: copy machine paper.

Though customers are quickly sold on the superstore concept, some manufacturers are taking longer to convince. They fear upsetting retailers and dealers of long standing. But Xerox has broadened its product line in these stores, and in April, IBM signed an agreement with Office Depot for a nine-month sales test of its $645 Personal Wheelwriter typewriter. Office Depot's price: $437. Says William McCracken, an IBM vice president: "If Office Depot is able to reach a new customer and not interfere with the profitability of our authorized dealers, then we would seriously think of expanding our distribution."

That could mean even more products for the office supply supermarkets. Get your shopping carts ready. F

REPORTER ASSOCIATE *Kate Ballen*

THE BIG THREE IN OFFICE PRODUCTS

COMPANY	SALES last 4 qtrs. in millions	EARNINGS last 4 qtrs. in millions	INITIAL OFFERING PRICE	STOCK PRICE 6/26/89	LOCATIONS
OFFICE DEPOT	**$173.8**	**$5.1**	**$6.667** 6/1/88	**$25.50**	**Alabama, Florida, Georgia, Kentucky, Missouri, North Carolina, South Carolina, Tennessee, Texas**
STAPLES	**$119.8**	**($1.9)**	**$19.00** 4/28/89	**$23.75**	**Connecticut, Maryland, Massachusetts, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Virginia**
OFFICE CLUB	**$73.8**	**($2.7)**	**$9.00** 12/8/88	**$15.375**	**Arizona, California, Colorado, Oregon, Washington**

FORTUNE

THE FORTUNE INTERNATIONAL 500

THE LARGEST INDUSTRIAL CORPORATIONS OUTSIDE THE U.S.

PHOTOGRAPH BY [illegible]

CONTENTS

THE WORLD'S 100 BIGGEST INDUSTRIAL CORPORATIONS....... 280
THE WORLD'S 50 BIGGEST BANKS....... 286
THE INTERNATIONAL 500....... 290
WHO DID BEST AND WORST....... 310
NOTES....... 314
ALPHABETICAL INDEX....... 316
THE 100 BIGGEST BANKS OUTSIDE THE U.S....... 320

THE WORLD'S BIGGEST INDUSTRIAL CORPORATIONS

THE NEW SHAPE OF GLOBAL BUSINESS

A list of the world's 100 biggest industrial companies is a picture of the global economy—and as this year's compilation shows, the picture is changing. The titans of 20th-century industry, motor vehicles and oil, are still dominant, but their fortunes are diverging. Of the carmakers that also appeared last year, nearly all advanced in the rankings. Of the oil refiners, almost every one declined. A couple of newer giants, computers and electronics, are strongly challenging both industries' preeminence.

The companies were culled from the International 500 (beginning on page 290) and the FORTUNE 500 largest U.S. industrials, which appeared April 24. In past years this global group has comprised 50 companies. Now, for the first time, it has been expanded to 100 to reflect the growing importance of international business.

Which nations dominate? America holds a commanding lead, with 39 entrants, followed by Japan with 15 and West Germany with 12. In all, 15 countries are represented, including India and Kuwait. But the group is more nationally diversified than these numbers suggest. For example, General Motors, while classified as American, includes huge subsidiaries that employ thousands locally in Canada, Germany, Britain, Spain, Belgium, Brazil, and Mexico.

Last year was a splendid one for these global businesses. They included just a single money loser: Ruhrkohle, the West German coal mining company that slid into a $76 million hole. Companies that lost money in 1987—Texaco, Tenneco, and Nippon Steel—inched into the black partly by downsizing. Texaco raised cash by selling its West German subsidiary for $1.2 billion. Tenneco followed the same strategy, auctioning its domestic oil division for $7.6 billion. Nippon Steel reduced its payroll by 1,500 employees.

The top ten were a restless bunch. Only three appear in the same position as last year, including the leader, GM. Royal Dutch/Shell Group, No. 2 last year, switched places with Ford Motor, which rose from fourth on record sales. The world's two largest industrial companies now reside not only in the same country but in the same metropolitan area.

But Detroit must bow to Tokyo as host to the most companies on the list (12). Paris and London follow with nine and seven, respectively. New York City has three. Big companies don't necessarily need big cities. Nestlé is headquartered in Vevey, Switzerland, (population: 16,139) and Unisys is in Blue Bell, Pennsylvania (population: 1,600).

While Asia's economic health gets lots of attention, this list clearly shows Europe's growing power. For example, West German chemical concerns all gained ground on world industry leader Du Pont (No. 19). Hoechst (No. 31) boosted sales 13%, overtaking Bayer at No. 33. Both trail BASF (No. 30), which increased sales 12%. Du Pont raised revenues only 7%. A merger of European giants created the world leader in industrial equipment: Sweden's Asea combined with Switzerland's Brown Boveri to create Asea Brown Boveri, which appears on the list at No. 45.

Expanding the list to 100 has brought new industries. The beverage business is represented by PepsiCo at No. 70, though the company was helped by its food businesses. Rival Coca-Cola's revenues were $1.5 billion too low to make the list. Goodyear (No. 85) shows up as the world's leading producer of rubber products. Weyerhaeuser, at No. 92, ranks as the world's biggest forest products company.

Only one company departed. AT&T, formerly No. 13, was reclassified and now tops the U.S. list of diversified service companies, with sales of $35 billion.

Last year was a remarkable one for automakers. Toyota, Chrysler, Fiat, Nissan, Peugeot, and Honda all moved up, averaging a rise of four spots each. GM's sales topped $120 billion, a record and nearly $30 billion more than Ford's. But its profits were $4.9 billion compared with Ford's $5.3 billion.

Petroleum refining, the other perennial industry at the top of the list, hasn't been having much luck since the dip in the price of crude oil. Although Exxon hung on to its No. 3 position, its competitors in the top ten—Royal Dutch/Shell, Mobil, and British Petroleum—all dropped.

Dominating the fast-expanding computer and electronics industries, No. 5 IBM is again the world's most profitable corporation, with earnings last year of $5.8 billion. General Electric moved up three spots, to No. 7, with a 26% sales burst—and look at how many other electronics manufacturers jumped up the list: Hitachi, Siemens, Matsushita Electric, Samsung, Toshiba, NEC, and Daewoo.

No one expects these companies to eliminate the Exxons and Shells from the top ranks of world commerce. But for those who argue that the global economy is destined to be influenced more by information and less by natural resources, the new names among the world's top industrial companies provide strong support.

– Susan E. Kuhn and David J. Morrow

Long-distance marketing: A Siemens engineer in Munich tests telephones built for customers around the world.

PHOTOGRAPH BY HANS VERHUFEN

THE WORLD'S BIGGEST INDUSTRIAL CORPORATIONS

RANK 1988	'87	COMPANY	HEADQUARTERS	INDUSTRY	SALES $ Millions	PROFITS $ Millions
1	1	GENERAL MOTORS	DETROIT	MOTOR VEHICLES	121,085.4	4,856.3
2	4	FORD MOTOR	DEARBORN, MICH.	MOTOR VEHICLES	92,445.6	5,300.2
3	3	EXXON	NEW YORK	PETROLEUM REFINING	79,557.0	5,260.0
4	2	ROYAL DUTCH/SHELL GROUP	LONDON/THE HAGUE	PETROLEUM REFINING	78,381.1	5,238.7
5	5	INTERNATIONAL BUSINESS MACHINES	ARMONK, N.Y.	COMPUTERS	59,681.0	5,806.0
6	8	TOYOTA MOTOR	TOYOTA CITY (JAPAN)	MOTOR VEHICLES	50,789.9	2,314.6
7	10	GENERAL ELECTRIC	FAIRFIELD, CONN.	ELECTRONICS	49,414.0	3,386.0
8	6	MOBIL	NEW YORK	PETROLEUM REFINING	48,198.0	2,087.0
9	7	BRITISH PETROLEUM	LONDON	PETROLEUM REFINING	46,174.0	2,155.3
10	9	IRI	ROME	METALS	45,521.5	921.9
11	11	DAIMLER-BENZ	STUTTGART	MOTOR VEHICLES	41,817.9	953.1
12	16	HITACHI	TOKYO	ELECTRONICS	41,330.7	989.0
13	21	CHRYSLER	HIGHLAND PARK, MICH.	MOTOR VEHICLES	35,472.7	1,050.2
14	18	SIEMENS	MUNICH	ELECTRONICS	34,129.4	757.0
15	17	FIAT	TURIN	MOTOR VEHICLES	34,039.3	2,324.7
16	19	MATSUSHITA ELECTRIC INDUSTRIAL	OSAKA	ELECTRONICS	33,922.5	1,177.2
17	15	VOLKSWAGEN	WOLFSBURG (W. GER.)	MOTOR VEHICLES	33,696.2	420.1
18	12	TEXACO	WHITE PLAINS, N.Y.	PETROLEUM REFINING	33,544.0	1,304.0
19	14	E.I. DU PONT DE NEMOURS	WILMINGTON, DEL.	CHEMICALS	32,514.0	2,190.0
20	20	UNILEVER	LONDON/ROTTERDAM	FOOD	30,488.2	1,485.6
21	24	NISSAN MOTOR	TOKYO	MOTOR VEHICLES	29,097.1	463.0
22	22	PHILIPS' GLOEILAMPENFABRIEKEN	EINDHOVEN (NETHERLANDS)	ELECTRONICS	28,370.5	477.1
23	27	NESTLÉ	VEVEY (SWITZERLAND)	FOOD	27,803.0	1,392.7
24	32	SAMSUNG	SEOUL	ELECTRONICS	27,386.1	464.3
25	25	RENAULT	PARIS	MOTOR VEHICLES	27,109.7	1,496.7
26	29	PHILIP MORRIS	NEW YORK	TOBACCO	25,860.0	2,337.0
27	35	TOSHIBA	TOKYO	ELECTRONICS	25,440.8	438.9
28	26	ENI	ROME	PETROLEUM REFINING	25,226.8	917.3
29	23	CHEVRON	SAN FRANCISCO	PETROLEUM REFINING	25,196.0	1,768.0
30	28	BASF	LUDWIGSHAFEN (W. GER.)	CHEMICALS	24,960.5	802.2
31	34	HOECHST	FRANKFURT	CHEMICALS	23,308.1	1,037.8
32	37	PEUGEOT	PARIS	MOTOR VEHICLES	23,249.7	1,485.8
33	33	BAYER	LEVERKUSEN (W. GER.)	CHEMICALS	23,025.9	1,055.5
34	39	HONDA MOTOR	TOKYO	MOTOR VEHICLES	22,236.5	819.5
35	30	CGE (CIE GÉNÉRALE D'ÉLECTRICITÉ)	PARIS	SCIEN. & PHOTO. EQUIP.	21,487.5	362.4
36	31	ELF AQUITAINE	PARIS	PETROLEUM REFINING	21,175.0	1,209.9
37	36	AMOCO	CHICAGO	PETROLEUM REFINING	21,150.0	2,063.0
38	38	IMPERIAL CHEMICAL INDUSTRIES	LONDON	CHEMICALS	20,839.0	1,490.9
39	47	NEC	TOKYO	ELECTRONICS	19,626.1	183.4
40	41	OCCIDENTAL PETROLEUM	LOS ANGELES	FOOD	19,417.0	302.0
41	42	PROCTER & GAMBLE	CINCINNATI	SOAPS, COSMETICS	19,336.0	1,020.0
42	•	FERRUZZI FINANZIARIA	RAVENNA	CHEMICALS	18,311.1	425.6
43	40	UNITED TECHNOLOGIES	HARTFORD	AEROSPACE	18,087.8	659.1
44	43	ATLANTIC RICHFIELD	LOS ANGELES	PETROLEUM REFINING	17,626.0	1,583.0
45	•	ASEA BROWN BOVERI	ZURICH	INDUS. AND FARM EQUIP.	17,562.0	386.0
46	•	DAEWOO	SEOUL	ELECTRONICS	17,251.2	33.3
47	49	NIPPON STEEL	TOKYO	METALS	17,108.9	291.7
48	•	EASTMAN KODAK	ROCHESTER, N.Y.	SCIEN. & PHOTO. EQUIP.	17,034.0	1,397.0
49	46	BOEING	SEATTLE	AEROSPACE	16,962.0	614.0
50	44	RJR NABISCO	ATLANTA	FOOD	16,956.0	1,393.0

▬ U.S. ▬ EUROPE ▬ ASIA LATIN AMERICA ▬ MIDDLE EAST • NOT ON LAST YEAR'S LIST

RANK		COMPANY	HEADQUARTERS	INDUSTRY	SALES	PROFITS
1988	'87				$ Millions	$ Millions
51	•	MITSUBISHI ELECTRIC	TOKYO	ELECTRONICS	16,857.4	160.6
52	•	THYSSEN	DUISBURG (W. GER.)	METALS	16,796.0	372.3
53	•	DOW CHEMICAL	MIDLAND, MICH.	CHEMICALS	16,682.0	2,398.0
54	•	XEROX	STAMFORD, CONN.	SCIEN. & PHOTO. EQUIP.	16,441.0	388.0
55	•	USX	PITTSBURGH	PETROLEUM REFINING	15,792.0	756.0
56	50	VOLVO	GOTEBORG (SWEDEN)	MOTOR VEHICLES	15,752.1	807.3
57	•	ROBERT BOSCH	STUTTGART	MOTOR VEHICLES	15,746.7	282.6
58	48	TENNECO	HOUSTON	INDUS. AND FARM EQUIP.	15,707.0	822.0
59	•	MAZDA MOTOR	HIROSHIMA	MOTOR VEHICLES	15,150.9	76.4
60	•	MCDONNELL DOUGLAS	ST. LOUIS	AEROSPACE	15,072.0	350.0
61	•	INI	MADRID	METALS	14,985.5	268.7
	45	PETROBRÁS (PETRÓLEO BRASILEIRO)	RIO DE JANEIRO	PETROLEUM REFINING	14,806.4	765.0
63	•	FUJITSU	TOKYO	COMPUTERS	14,797.3	304.5
64	•	MITSUBISHI MOTORS	TOKYO	MOTOR VEHICLES	14,183.3	96.2
65	•	BAT INDUSTRIES	LONDON	TOBACCO	14,066.7	1,717.1
66	•	TOTAL	PARIS	PETROLEUM REFINING	13,986.6	248.4
67	•	MITSUBISHI HEAVY INDUSTRIES	TOKYO	INDUS. AND FARM EQUIP.	13,398.0	221.8
68	•	USINOR	PARIS	METALS	13,247.1	737.5
	•	PEMEX (PETRÓLEOS MEXICANOS)	MEXICO CITY	PETROLEUM REFINING	13,060.0	570.6
70	•	PEPSICO	PURCHASE, N.Y.	BEVERAGES	13,007.0	762.2
71	•	NIPPON OIL	TOKYO	PETROLEUM REFINING	12,773.0	167.0
72	•	THOMSON	PARIS	ELECTRONICS	12,566.6	201.0
73	•	WESTINGHOUSE ELECTRIC	PITTSBURGH	ELECTRONICS	12,499.5	822.8
74	•	KUWAIT PETROLEUM	SAFAT	PETROLEUM REFINING	12,078.0	435.2
75	•	CIBA-GEIGY	BASEL	CHEMICALS	12,059.5	905.5
76	•	ELECTROLUX	STOCKHOLM	ELECTRONICS	12,055.4	342.8
77	•	ROCKWELL INTERNATIONAL	EL SEGUNDO, CALIF.	AEROSPACE	11,946.3	811.9
78	•	ALLIED-SIGNAL	MORRISTOWN, N.J.	AEROSPACE	11,909.0	463.0
79	•	BMW (BAYERISCHE MOTOREN WERKE)	MUNICH	MOTOR VEHICLES	11,762.5	215.8
80	•	RUHRKOHLE	ESSEN	MINING, CRUDE-OIL PROD.	11,749.9	(75.5)
81	•	MANNESMANN	DUSSELDORF	INDUS. AND FARM EQUIP.	11,619.9	135.2
82	•	DIGITAL EQUIPMENT	MAYNARD, MASS.	COMPUTERS	11,475.4	1,305.6
83	•	PHILLIPS PETROLEUM	BARTLESVILLE, OKLA.	PETROLEUM REFINING	11,304.0	650.0
84	•	RHÔNE-POULENC	PARIS	CHEMICALS	10,971.3	613.1
85	•	GOODYEAR TIRE & RUBBER	AKRON	RUBBER PRODUCTS	10,810.4	350.1
86	•	LOCKHEED	CALABASAS, CALIF.	AEROSPACE	10,667.0	624.0
87	•	MINNESOTA MINING & MFG.	ST. PAUL	SCIEN. & PHOTO. EQUIP.	10,581.0	1,154.0
88	•	CATERPILLAR	PEORIA, ILL.	INDUS. AND FARM EQUIP.	10,435.0	616.0
89	•	SARA LEE	CHICAGO	FOOD	10,423.8	325.1
90	•	SONY	TOKYO	ELECTRONICS	10,133.9	265.6
91	•	BRITISH AEROSPACE	LONDON	AEROSPACE	10,044.6	277.9
92	•	WEYERHAEUSER	TACOMA	FOREST PRODUCTS	10,004.2	564.4
93	•	ADAM OPEL	RUSSELSHEIM (W. GER.)	MOTOR VEHICLES	9,935.8	287.2
94	•	UNISYS	BLUE BELL, PA.	COMPUTERS	9,902.0	680.6
95	•	HANSON	LONDON	FOOD	9,900.4	1,986.8
96	•	PETROFINA	BRUSSELS	PETROLEUM REFINING	9,898.5	549.1
97	•	SAINT-GOBAIN	PARIS	BUILDING MATERIALS	9,886.6	679.1
98	•	INDIAN OIL	BOMBAY	PETROLEUM REFINING	9,853.7	316.8
99	•	HEWLETT-PACKARD	PALO ALTO, CALIF.	COMPUTERS	9,831.0	816.0
100	•	ALUMINUM CO. OF AMERICA	PITTSBURGH	METALS	9,795.3	861.4
		TOTALS			2,308,810.8	107,799.6

THE WORLD'S BIGGEST COMMERCIAL BANKS

RISING IN THE PACIFIC

The table across the page is FORTUNE's first annual list of the World's 50 Biggest Banks. How big are they? Their total assets are $8.2 trillion—more than the combined gross national products of the U.S., Britain, Brazil, France, and West Germany. Put another way, that's enough to buy a Porsche 944 for every man, woman, and child in America.

As you would expect, the Japanese are prominent on the list, with 23 institutions controlling nearly 60% of the total assets. U.S. banks are represented sparsely. The list includes just four: Citicorp (No. 12), Chase Manhattan (No. 37), BankAmerica (No. 38), and J.P. Morgan (No. 49). That performance may seem embarrassing in light of America's size. The nation's economy is still 50% larger than Japan's. Two smaller countries, West Germany and France, have five banks each on the list, and Britain has four.

But U.S. banks have nothing to be ashamed of when it comes to profits. The Third World debt crisis a couple of years ago forced them to streamline, and the vibrant U.S. economy has kept them humming. Citicorp earned $1.9 billion last year, far more than any other bank on the list. Chase's $1.1 billion and Morgan's $1 billion in profits beat all but a handful of the others. BankAmerica's $726 million was well above the list's average and not bad for a bank that had lost money in the three previous years.

A list of the world's biggest banks may say something about the shape of the world economy. These 50 banks come from only North America, Europe, and Asia. South America, Africa, and Australia are not represented. The breakdown among the Big Three: North America has five of the 50, Europe 20, and Asia 25.

RANK 1988		HEADQUARTERS	ASSETS $ Millions	DEPOSITS $ Millions
1	DAI-ICHI KANGYO BANK	TOKYO	379,322.8	283,185.4
2	SUMITOMO BANK	OSAKA	363,232.6	267,995.2
3	FUJI BANK	TOKYO	360,529.8	258,574.7
4	MITSUBISHI BANK	TOKYO	348,999.0	251,146.9
5	SANWA BANK	OSAKA	330,705.4	246,625.5
6	INDUSTRIAL BANK OF JAPAN	TOKYO	272,918.3	216,615.9
7	NORINCHUKIN BANK	TOKYO	235,944.3	214,256.7
8	TOKAI BANK	NAGOYA	227,644.3	172,072.5
9	MITSUI BANK	TOKYO	211,358.6	152,698.9
10	CRÉDIT AGRICOLE	PARIS	210,566.3	167,103.5
11	MITSUBISHI TRUST & BANKING	TOKYO	208,341.7	178,030.5
12	CITICORP	NEW YORK	207,666.0	124,072.0
13	BANQUE NATIONALE DE PARIS	PARIS	196,922.3	169,887.1
14	BARCLAYS BANK	LONDON	189,250.5	157,401.0
15	BANK OF TOKYO	TOKYO	185,428.8	129,368.4
16	LONG-TERM CREDIT BANK OF JAPAN	TOKYO	184,752.9	147,167.6
17	SUMITOMO TRUST & BANKING	OSAKA	182,529.1	162,201.0
18	CRÉDIT LYONNAIS	PARIS	178,848.1	153,745.4
19	NATIONAL WESTMINSTER BANK	LONDON	178,394.1	153,688.1
20	TAIYO KOBE BANK	KOBE	175,470.4	131,757.8
21	MITSUI TRUST & BANKING	TOKYO	174,943.5	151,352.7
22	DEUTSCHE BANK	FRANKFURT	172,142.5	154,824.6
23	YASUDA TRUST & BANKING	TOKYO	167,125.4	126,845.0
24	SOCIÉTÉ GÉNÉRALE	PARIS	155,457.3	134,494.6
25	DAIWA BANK	OSAKA	150,733.7	76,790.4
26	BANK OF CHINA	BEIJING	149,997.5	60,068.4
27	DRESDNER BANK	FRANKFURT	130,230.6	121,145.4
28	CIE FINANCIÈRE DE PARIBAS	PARIS	121,597.4	94,916.2
29	TOYO TRUST & BANKING	TOKYO	120,873.1	109,130.6
30	NIPPON CREDIT BANK	TOKYO	115,176.8	92,108.1
31	HONGKONG & SHANGHAI BANKING	HONG KONG	113,165.7	101,886.9
32	UNION BANK OF SWITZERLAND	ZÜRICH	110,907.4	92,516.3
33	KYOWA BANK	TOKYO	110,613.7	83,621.8
34	SWISS BANK CORP.	BASEL	102,602.4	86,544.4
35	COMMERZBANK	FRANKFURT	101,719.9	95,557.8
36	MIDLAND BANK	LONDON	100,785.9	86,777.3
37	CHASE MANHATTAN CORP.	NEW YORK	97,455.1	64,056.7
38	BANKAMERICA CORP.	SAN FRANCISCO	94,647.0	77,150.0
39	LLOYDS BANK	LONDON	93,741.8	82,934.2
40	SHOKO CHUKIN BANK	TOKYO	93,210.0	84,031.6
41	SAITAMA BANK	URAWA	93,168.3	70,988.5
42	WESTDEUTSCHE LANDESBANK	DÜSSELDORF	93,037.5	85,903.0
43	BAYERISCHE VEREINSBANK	MUNICH	91,669.7	85,675.7
44	BANCA NAZIONALE DEL LAVORO	ROME	90,968.7	76,262.2
45	ROYAL BANK OF CANADA	MONTREAL	90,230.7	72,312.2
46	ZENSHINREN BANK	TOKYO	86,874.6	79,358.2
47	ALGEMENE BANK NEDERLAND	AMSTERDAM	85,069.9	76,026.0
48	AMSTERDAM-ROTTERDAM BANK	AMSTERDAM	83,967.0	73,955.0
49	J.P. MORGAN & CO.	NEW YORK	83,923.0	42,469.0
50	ISTITUTO BANCARIO SAN PAOLO DI TORINO	TURIN	81,648.1	61,861.4
	TOTALS		8,186,509.5	6,439,158.4

POWERFUL PROFITS AROUND THE WORLD

Results for the International 500 companies in 1988 were better than good. They were stellar. Sales increased some $400 billion, a 16% jump over 1987. Profits soared almost 50%, to $116 billion, and the International 500 employed 300,000 more workers. How hard is it to keep up with this crowd? Showa Sangyo, a Japanese food company that was No. 499 on last year's list, pushed sales up $70 million—but that wasn't enough to make this year's cutoff.

Toyota surpassed British Petroleum to become the second-largest industrial company outside the U.S. The key: Toyota's relentless annual sales growth averaging 22% for the past five years vs. the petroleum industry's slump. Oil's decline hit Royal Dutch/Shell too, but not hard enough to knock it out of the top spot. Near the bottom of the list, a pair of Japanese companies with familiar brand names make their first appearances: Kikkoman, the maker of soy sauce, and Nintendo, the conqueror of the videogame industry.

This year's award for Most Improved Performance by an Industry goes to mining. Median sales for companies in this category rose 24%, and median profits soared 148%. Inco, the Canadian producer of nickel, increased sales 82% in 1988, the largest rise of any company not affected by a merger or an accounting change. Inco's revenue explosion produced profits of $735 million, more than double the company's previous high, and the shareholders managed to get their hands on some of it. In December they approved a recapitalization that paid a cash dividend of over $1 billion.

Precious metals produced sparkling profits, even in economically isolated South Africa, where the rand dropped 19% against the dollar in 1988. De Beers celebrated its centennial year by doubling profits on record diamond sales of $4.2 billion, a 35% increase. The diamond's humble ancestor, coal, continued to smudge the spotlight. British Coal, a perennial money loser, saw no black on the bottom line for the tenth consecutive year.

Rubber products manufacturers enjoyed a bonanza last year as a result of factors that will be tough to duplicate. Bridgestone's sales soared 64% after the Japanese company bought Firestone in May and became the world's No. 2 producer (behind Goodyear). Sumitomo Rubber Industries' sales rocketed 71%, boosted by Dunlop, its sporting goods division. Dunlop supplies tennis rackets to Steffi Graf, and when she won tennis's grand slam last year, Dunlop sales rose 145%.

Australia's money-coining CRA Ltd. controls this diamond mine.

As always, mergers provided new names for the list and eye-catching leaps in the rankings. Italy's Ferruzzi Finanziaria appears at No. 28, following the Ferruzzi family's acquisition of a controlling interest in Montedison (No. 48 on last year's list) and subsequent reorganization of its holdings, including Ferruzzi Agricola—No. 253 last year. New Zealand's Fletcher Challenge boosted sales 77% largely through two acquisitions, and revenues of Australia's Bond Corporation Holdings rose 144% after it bought eight companies in a ten-month shopping spree.

The dollar's weakness against most major currencies polished a lot of performances, no matter how mediocre. British Petroleum's sales fell £1.6 billion, but that drop became a $968 million gain in the transatlantic conversion. Yen users did even better. Kawasaki Heavy Industries' sales plunged 14% last year, but slipped only 0.6% in dollars.

As always, the list includes overseas subsidiaries of U.S. companies if the parent provides separate financial results. IBM, which draws over half its revenue from outside the States, has six qualifying entrants. But not all American companies boast a robust fleet of international subsidiaries. Last year Mobil's British and Canadian subsidiaries fell off the list. This year depressed sales eliminated the company's Italian and French units. Mobil Oil of West Germany, despite a drop of 77 places, is the last to hold on, at No. 310.

**– Susan E. Kuhn
and David J. Morrow**

CORPORATIONS OUTSIDE THE U.S.

RANK BY SALES 1988	1987	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	PROFITS Rank	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank	EMPLOYEES Number	EMPLOYEES Rank	INDUSTRY CODE ✓
1	1	ROYAL DUTCH/SHELL GROUP	BRITAIN NETH.	78,381.1	5,238.7	1	85,681.3	1	45,485.6	1	134,000	29	29
2	3	TOYOTA MOTOR	JAPAN	50,789.9	2,314.6	3	40,817.6	5	24,603.2	3	86,082	51	40
3	2	BRITISH PETROLEUM	BRITAIN	46,174.0	2,155.3	4	53,030.6	2	20,830.3	4	125,950	33	29
4	4	IRI	ITALY	45,521.5	921.9	28	N.A.		N.A.		417,826	2	33
5	5	DAIMLER-BENZ	W. GERMANY	41,817.9	953.1	26	29,281.6	13	6,031.6	32	338,749	4	40
6	7	HITACHI	JAPAN	41,330.7	989.0	23	49,862.4	3	16,265.5	6	263,996	8	36
7	9	SIEMENS	W. GERMANY	34,129.4	757.0	39	31,829.8	10	8,998.8	13	353,000	3	36
8	8	FIAT	ITALY	34,039.3	2,324.7	2	40,424.3	6	10,358.6	10	277,353	7	40
9	10	MATSUSHITA ELECTRIC INDUSTRIAL	JAPAN	33,922.5	1,177.2	18	39,011.4	7	19,961.4	5	134,186	28	36
10	6	VOLKSWAGEN	W. GERMANY	33,696.2	420.1	77	28,358.8	15	6,116.8	30	252,066	9	40
11	11	UNILEVER	BRITAIN NETHERLANDS	30,488.2	1,485.6	11	19,893.5	28	5,810.7	33	291,000	6	20
12	13	NISSAN MOTOR	JAPAN	29,097.1	463.0	71	33,631.2	9	11,645.2	8	108,716	40	40
13	12	PHILIPS' GLOEILAMPENFABRIEKEN	NETH.	28,370.5	477.1	67	25,483.5	19	7,729.8	18	310,258	5	36
14	16	NESTLÉ	SWITZERLAND	27,803.0	1,392.7	13	22,083.2	24	7,151.1	19	197,722	12	20
15	20	SAMSUNG	SOUTH KOREA	27,386.1	464.3	70	22,192.7	23	2,749.2	94	175,710	14	36
16	14	RENAULT	FRANCE	27,109.7	1,496.7	8	18,185.3	33	2,312.2	115	181,715	13	40
17	23	TOSHIBA	JAPAN	25,440.8	438.9	72	27,873.8	17	5,785.2	34	122,000	34	36
18	15	ENI	ITALY	25,226.8	917.3	29	36,297.4	8	8,928.1	14	116,364	39	29
19	17	BASF	W. GERMANY	24,960.5	802.2	35	18,454.8	32	7,050.6	21	134,834	27	28
20	22	HOECHST	W. GERMANY	23,308.1	1,037.8	20	17,693.8	36	5,713.0	37	164,527	19	28
21	24	PEUGEOT	FRANCE	23,249.7	1,485.8	10	16,148.0	40	4,828.9	47	158,100	20	40
22	21	BAYER	W. GERMANY	23,025.9	1,055.5	19	19,365.7	29	8,313.5	16	165,700	18	28
23	26	HONDA MOTOR	JAPAN	22,236.5	819.5	33	14,382.1	49	6,282.7	28	58,320	77	40
24	18	CGE (CIE GÉNÉRALE D'ÉLECTRICITÉ)	FRANCE	21,487.5	362.4	92	29,590.1	12	2,950.2	85	204,100	10	36
25	19	ELF AQUITAINE	FRANCE	21,175.0	1,209.9	16	28,032.0	16	9,645.4	12	73,000	64	29
26	25	IMPERIAL CHEMICAL INDUSTRIES	BRITAIN	20,839.0	1,490.9	9	16,999.9	37	7,098.4	20	130,400	31	28
27	28	NEC	JAPAN	19,626.1	183.4	192	23,408.0	21	4,780.2	48	102,452	44	36
28	•	FERRUZZI FINANZIARIA	ITALY	18,311.1	425.6	76	26,850.2	18	2,362.4	112	75,811	60	28
29	•	ASEA BROWN BOVERI	SWITZERLAND	17,562.0	386.0	85	18,965.0	30	3,122.0	78	169,459	16	45
30	35	DAEWOO	SOUTH KOREA	17,251.2	33.3	425	24,397.2	20	2,917.3	86	93,930	47	36
31	29	NIPPON STEEL	JAPAN	17,108.9	291.7	117	28,614.8	14	5,459.7	40	67,766	68	33
32	38	MITSUBISHI ELECTRIC	JAPAN	16,857.4	160.6	214	17,961.3	34	4,444.8	53	75,795	61	36
33	33	THYSSEN	W. GERMANY	16,796.0	372.3	87	10,333.4	74	2,150.2	121	127,778	32	33
34	30	VOLVO	SWEDEN	15,752.1	807.3	34	14,536.6	46	4,574.6	51	78,614	56	40
35	34	ROBERT BOSCH	W. GERMANY	15,746.7	282.6	124	11,447.1	64	3,254.9	74	167,780	17	40
36	40	GENERAL MOTORS OF CANADA	CANADA	15,657.2	291.4	118	4,912.2	173	2,254.0	118	43,571	111	40
37	46	MAZDA MOTOR	JAPAN	15,150.9	76.4	310	9,576.8	80	2,647.9	101	28,027	178	40
38	39	INI	SPAIN	14,985.5	268.7	138	30,021.6	11	6,846.5	23	155,945	24	33
39	27	PETROBRÁS	BRAZIL	14,806.4	765.0	37	13,535.0	51	6,973.3	22	67,080	70	29
40	43	FUJITSU	JAPAN	14,797.3	304.5	110	18,667.2	31	6,664.2	25	94,825	46	44
41	56	MITSUBISHI MOTORS	JAPAN	14,183.3	96.2	282	11,593.2	63	1,250.9	195	25,600	195	40
42	41	BAT INDUSTRIES	BRITAIN	14,066.7	1,717.1	7	17,909.6	35	6,512.4	26	156,694	23	21
43	31	TOTAL	FRANCE	13,986.6	248.4	149	14,512.7	47	3,599.7	64	41,862	117	29
44	45	MITSUBISHI HEAVY INDUSTRIES	JAPAN	13,398.0	221.8	166	22,472.6	22	4,907.3	45	56,100	82	45
45	44	USINOR	FRANCE	13,247.1	737.5	40	13,188.5	53	2,094.2	126	80,700	54	33
46	36	PEMEX (PETRÓLEOS MEXICANOS)	MEXICO	13,060.0	570.6	56	45,669.3	4	28,216.6	2	170,766	15	29
47	51	FORD MOTOR OF CANADA	CANADA	12,927.0	218.8	167	3,025.0	284	1,187.6	207	27,300	182	40
48	47	NIPPON OIL	JAPAN	12,773.0	167.0	204	12,896.0	57	3,310.4	70	10,178	373	29
49	54	THOMSON	FRANCE	12,566.6	201.0	177	21,816.0	25	1,450.8	175	104,000	43	36
50	53	KUWAIT PETROLEUM	KUWAIT	12,078.0	435.2	74	21,495.7	26	14,845.2	7	15,450	298	29

The definitions and concepts underlying the figures in this directory are explained on page 314. ✓ Industry code definitions appear on page 314. Footnotes appear on page 314.

THE 50 INTERNATIONAL

100

RANK BY SALES 1988	1987	COMPANY	COUNTRY	SALES	PROFITS		ASSETS		STOCKHOLDERS' EQUITY		EMPLOYEES		INDUSTRY CODE
				$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
51	50	CIBA-GEIGY	SWITZERLAND	12,059.5[5]	905.5	30	16,452.1	39	10,233.0	11	88,757	49	28
52	49	ELECTROLUX	SWEDEN	12,055.4	342.8	97	9,363.4	84	2,088.9	127	147,200	25	36
53	52	BMW (BAYERISCHE MOTOREN)	W. GERMANY	11,762.5	215.8	170	6,519.5	128	1,955.4	134	58,000	78	40
54	42	RUHRKOHLE	W. GERMANY	11,749.9	(75.5)	492	11,049.1	69	582.5	365	120,341	36	10
55	59	MANNESMANN	W. GERMANY	11,619.9	135.2	235	8,381.4	97	2,114.1	125	121,782	35	45
56	58	RHÔNE-POULENC [2]	FRANCE	10,971.3	613.1	50	11,169.6	68	3,103.5	80	79,670	55	28
57	57	FORD-WERKE	W. GERMANY	10,951.2	309.9	108	5,072.0	167	928.5	267	49,530	94	40
58	65	FORD MOTOR	BRITAIN	10,573.6	776.6	36	8,241.3	100	1,770.5	143	47,900	101	40
59	71	SONY [3]	JAPAN	10,133.9[6]	265.6[6]	141	15,043.2[6]	44	5,240.5[6]	42	60,500[6]	75	36
60	94	BRITISH AEROSPACE	BRITAIN	10,044.6	277.9	127	11,744.4	62	3,823.2	61	131,300	30	41
61	55	ADAM OPEL	W. GERMANY	9,935.8	287.2	121	3,767.3	230	861.5	285	52,675	89	40
62	62	HANSON [4]	BRITAIN	9,900.4	1,986.8	5	13,210.1	52	3,955.2	59	105,000	41	20
63	64	PETROFINA	BELGIUM	9,898.5	549.1	58	9,469.7	81	3,177.0	76	23,000	217	29
64	37	SAINT-GOBAIN	FRANCE	9,886.6	679.1	45	11,395.7	65	3,257.4	73	84,689	53	32
65	63	INDIAN OIL [2,3]	INDIA	9,853.7	316.8	102	3,978.9	215	1,340.9	187	33,602	142	29
66	89	BTR	BRITAIN	9,748.3	840.0	32	8,387.1	96	2,469.1	107	98,620	45	32
67	60	CANADIAN PACIFIC	CANADA	9,742.9[5]	664.9	47	14,797.8	45	6,122.7	29	76,400	58	26
68	67	PETRÓLEOS DE VENEZUELA [2]	VENEZUELA	9,507.8	1,018.6	21	12,935.4	56	11,114.6	9	45,069	107	29
69	73	GEC (GENERAL ELECTRIC CO.) [3]	BRITAIN	9,457.1	757.7	38	10,102.2	77	5,122.2	44	157,262	22	36
70	70	SANYO ELECTRIC [9]	JAPAN	9,375.6[5]	47.7	381	13,691.6	50	5,414.8	41	39,179	123	36
71	78	BARLOW RAND [4]	SOUTH AFRICA	9,314.6[5]	278.5	126	5,447.9	156	1,113.6	224	157,483	21	20
72	120	BRIDGESTONE	JAPAN	9,296.0	310.2	107	11,194.3	67	3,022.2	82	88,148	50	30
73	81	IBM JAPAN	JAPAN	9,269.6[6]	665.1[6]	46	5,495.2[6]	154	2,490.5[6]	105	21,061[6]	235	44
74	83	ISUZU MOTORS [8]	JAPAN	9,267.9[5]	51.0	370	7,001.2	121	1,124.8	220	24,443	209	40
75	69	NORSK HYDRO [2]	NORWAY	9,202.0	526.4	60	11,276.0	66	2,507.2	104	39,009	124	28
76	75	GRAND METROPOLITAN	BRITAIN	9,024.7	1,244.6	15	9,885.9	79	5,760.7	35	89,753	48	49
77	86	NIPPONDENSO	JAPAN	8,962.5[6]	301.1[6]	112	8,213.3[6]	101	4,020.6[6]	57	47,359[6]	102	40
78	79	IDEMITSU KOSAN [3]	JAPAN	8,814.9[6]	9.2[6]	471	10,123.1[6]	76	337.9[6]	441	5,497[6]	451	29
79	85	METALLGESELLSCHAFT [4]	W. GERMANY	8,757.4	64.1	337	4,424.3	193	564.4	369	25,132	201	33
80	74	MICHELIN	FRANCE	8,702.0	397.4	83	10,526.0	72	2,360.8	113	117,000	38	30
81	80	MAN	W. GERMANY	8,639.0	103.1	274	7,574.7	111	1,180.9	209	61,901	74	45
82	91	CANON	JAPAN	8,631.0[6]	289.5[6]	120	10,394.6[6]	73	3,330.4[6]	69	40,740[6]	121	44
83	99	PECHINEY [2]	FRANCE	8,616.5	336.5	98	13,031.5	55	1,610.2	158	49,000	97	33
84	87	SHARP [3]	JAPAN	8,608.0[6]	146.3[6]	225	13,042.9[6]	54	3,851.1[6]	60	29,351[6]	163	36
85	76	AKZO	NETHERLANDS	8,388.1	426.3	75	6,732.3	125	2,143.0	122	71,100	66	28
86	72	FRIED. KRUPP	W. GERMANY	8,385.4	(153.4)	493	5,621.8	151	749.0	310	63,391	73	33
87	82	NKK [3,[illegible]]	JAPAN	8,276.0	122.4[6]	250	21,270.5	27	1,963.5[6]	133	31,223[6]	151	33
88	97	ALCAN ALUMINIUM	CANADA	8,275.0	931.0	27	8,615.0	92	4,320.0	54	56,000	84	34
89	84	REPSOL [2]	SPAIN	7,951.8	480.3	66	6,400.2	132	2,909.2	87	18,716	258	29
90	77	DALGETY	BRITAIN	7,893.8	140.9	229	2,209.1	355	623.6	351	22,820	219	20
91	●	COSMO OIL [3]	JAPAN	7,860.3	56.3	358	8,765.9	90	495.5	390	4,191	475	29
92	61	SHOWA SHELL SEKIYU	JAPAN	7,744.8	85.8	296	6,009.0	[illegible]	522.0	381	2,428	491	29
93	90	SUNKYONG	SOUTH KOREA	7,722.6	138.8	232	4,970.0	171	1,291.9	191	20,572	239	29
94	113	ASAHI GLASS	JAPAN	7,702.1	358.1	93	8,159.8	102	3,604.1	63	16,692	282	28
95	112	SUMITOMO METAL INDUSTRIES	JAPAN	7,675.5	20.7	451	16,606.5	38	2,706.5	95	29,509	161	33
96	96	KOBE STEEL	JAPAN	7,631.9	34.9	419	15,899.5	41	1,604.7	160	25,583	196	33
97	108	ELDERS IXL	AUSTRALIA	7,618.2	555.0	57	7,387.2	114	3,347.4	67	38,000	128	49
98	92	BRITISH COAL	BRITAIN	7,473.1	(919.7)	497	12,224.5	59	(709.3)	497	117,355	37	10
99	109	TAIYO FISHERY	JAPAN	7,410.8	1.0	478	3,507.6	249	258.0	465	8,066	401	20
100	104	KAWASAKI STEEL	JAPAN	7,333.1	62.9	341	14,385.4	48	2,700.6	96	26,909	185	34

The definitions and concepts underlying the figures in this directory are explained on page 314. Industry code definitions appear on page 314. Footnotes appear on page 314.

THE 500 INTERNATIONAL

RANK BY SALES 1988	1987	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	PROFITS Rank	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank	EMPLOYEES Number	EMPLOYEES Rank	INDUSTRY CODE ✓
101	95	JAPAN TOBACCO [2,3]	JAPAN	7,261.7[6]	266.2[6]	139	12,232.4[6]	58	7,866.1[6]	17	28,100[6]	176	21
102	106	MITSUBISHI KASEI [2,11,12]	JAPAN	7,157.4	171.6	201	10,025.1	78	1,498.3	172	19,014	252	28
103	107	BSN	FRANCE	7,082.6	367.6	90	6,409.1	131	2,590.8	102	42,234	115	20
104	115	BROKEN HILL PROPRIETARY [13]	AUSTRALIA	7,079.5	710.1	42	15,325.3	42	4,697.6	50	51,000	90	33
105	125	NORANDA	CANADA	7,040.3[5]	488.9	65	9,460.9	82	3,419.7	65	48,000	100	26
106	126	CHRYSLER CANADA	CANADA	7,028.0	103.1	273	2,619.6	317	802.9	299	15,000	304	40
107	136	BRITISH STEEL [2,3]	BRITAIN	7,009.8	698.3	43	8,406.2	95	6,397.1	27	53,720	87	33
108	122	PIRELLI	ITALY/SWITZERLAND	7,006.4	172.1	200	3,685.0	236	1,992.4	131	71,802	65	30
109	123	SUMITOMO CHEMICAL	JAPAN	7,002.0	304.9	109	7,856.9	107	1,442.3	177	12,340	341	28
110	124	RTZ	BRITAIN	6,974.9	1,392.6	14	8,257.1	99	3,711.9	62	56,591	81	10
111	110	SANDOZ	SWITZERLAND	6,936.9	520.0	62	7,211.1	117	4,009.3	58	48,079	98	42
112	98	SAAB-SCANIA	SWEDEN	6,925.5	254.6	148	6,646.1	127	1,265.0	194	50,000	92	40
113	118	IBM UNITED KINGDOM HOLDINGS	BRITAIN	6,900.6	582.5	53	3,608.0	241	1,593.3	162	18,686	260	44
114	111	SOLVAY	BELGIUM	6,893.4[5]	368.5	88	6,214.0	134	2,004.0	129	44,301	110	28
115	121	ASAHI CHEMICAL INDUSTRY [3]	JAPAN	6,882.4	175.4	197	7,319.3	115	2,178.0	120	22,105	225	22
116	145	SCHNEIDER	FRANCE	6,799.9	94.0	284	10,559.4	71	691.9	323	74,996	62	36
117	93	VEBA OEL	W. GERMANY	6,788.3	98.7	280	2,734.7	304	690.4	325	17,156	277	29
118	114	CHINESE PETROLEUM [2]	TAIWAN	6,706.4	1,942.4	6	8,147.9	103	6,045.7	31	23,328	211	29
119	128	DAI NIPPON PRINTING [3]	JAPAN	6,574.7[7]	234.4[7]	156	6,126.9	135	3,128.5	77	13,470	323	27
120	66	STATOIL [2]	NORWAY	6,554.0	52.1	368	9,137.7	87	651.9	340	11,167	359	29
121	150	BERTELSMANN [1]	W. GERMANY	6,538.9	127.8	244	3,660.4	237	641.5	343	41,961	116	27
122	100	IBM DEUTSCHLAND	W. GERMANY	6,470.8	366.8	91	4,543.2	189	1,643.4	156	30,712	153	44
123	119	OLIVETTI	ITALY	6,458.9	273.6	132	9,002.1	88	2,577.7	103	57,560	79	44
124	129	SNOW BRAND MILK PRODUCTS [3]	JAPAN	6,435.1	38.8	406	2,921.7	289	558.0	370	14,604	307	20
125	147	YPF (YACIMIENTOS PETRÓLIFEROS) [2]	ARGEN.	6,435.0	N.A.		12,164.0	60	8,320.8	15	33,757	140	29
126	134	AÉROSPATIALE [2]	FRANCE	6,417.6	(10.6)	484	8,596.7	93	958.9	255	39,192	122	41
127	105	IBM FRANCE	FRANCE	6,409.0	388.3	84	4,901.4	174	1,776.5	142	21,832	231	44
128	131	SUZUKI MOTOR [3]	JAPAN	6,379.4	76.7	309	4,663.0	185	1,002.1	244	12,897	330	40
129	101	NESTE [2]	FINLAND	6,352.9	318.3	101	6,391.8	133	2,692.2	97	10,855	364	29
130	141	HILLSDOWN HOLDINGS	BRITAIN	6,321.4	368.2	89	2,737.5	302	863.9	283	42,832	114	20
131	116	ISHIKAWAJIMA-HARIMA HEAVY IND. [3]	JAPAN	6,174.7	3.8	474	8,938.4	89	1,001.4	245	26,747	186	45
132	143	TOPPAN PRINTING [3]	JAPAN	6,148.1[7]	164.2[7]	207	5,310.7	159	2,307.4	116	14,200	310	27
133	152	MATSUSHITA ELECTRIC WORKS [3]	JAPAN	6,131.9	185.6	187	5,768.1	149	2,374.2	111	18,153	266	45
134	155	ALLIED-LYONS [14]	BRITAIN	6,037.0	493.1	63	7,654.4	108	3,293.4	71	78,128	57	49
135	153	SSANGYONG	SOUTH KOREA	6,021.2	196.1	181	9,434.4	83	2,019.0	128	18,831	255	29
136	133	FUJI PHOTO FILM [15]	JAPAN	5,987.7	576.2	54	9,209.8	85	5,653.7	38	18,195	265	38
137	135	ROCHE/SAPAC	SWITZERLAND	5,938.8	438.4	73	10,170.2	75	6,707.9	24	49,671	93	42
138	137	HENKEL	W. GERMANY	5,833.0	183.5	191	4,196.4	203	1,493.5	173	35,943	132	28
139	102	ESSO UK	BRITAIN	5,774.7	538.8	59	7,604.4	110	1,845.9	138	4,530	468	29
140	161	SALZGITTER [2,4]	W. GERMANY	5,634.4	45.0	388	4,511.3	190	931.2	264	38,020	127	33
141	163	MITSUBISHI METAL [3]	JAPAN	5,611.1[6]	45.8[6]	384	5,845.9[6]	145	605.4[6]	356	11,265[6]	357	33
142	207	STORA KOPPARBERGS BERGSLAGS	SWEDEN	5,583.7	180.9	194	8,001.6	105	1,237.3	196	54,014	86	26
143	149	KOÇ HOLDING	TURKEY	5,568.6[5]	304.4	111	1,602.8	410	294.4	453	33,662	141	40
144	154	SUMITOMO ELECTRIC INDUSTRIES [3]	JAPAN	5,556.7	134.4	238	5,971.6	140	1,953.8	135	25,246	200	34
145	184	KIRIN BREWERY	JAPAN	5,550.1[6,7]	275.1[6,7]	131	7,876.8[6]	106	2,969.2[6]	83	12,238[6]	342	49
146	169	BASS [4]	BRITAIN	5,436.9	572.7	55	6,944.6	122	4,242.5	55	84,843	52	49
147	146	NORTHERN TELECOM	CANADA	5,407.5	183.2	193	5,878.2	144	2,671.8	98	50,136	91	36
148	151	VIAG	W. GERMANY	5,388.7[5]	114.3	261	5,819.2	147	1,235.4	197	33,427	144	33
149	162	NIPPON MINING [3]	JAPAN	5,375.5[6]	53.1[6]	366	5,552.8[6]	153	780.2[6]	309	7,326[6]	411	29
150	156	TORAY INDUSTRIES [3]	JAPAN	5,362.4	208.7	176	7,107.6	120	2,396.3	109	25,409	198	22

The definitions and concepts underlying the figures in this directory are explained on page 314. ✓ Industry code definitions appear on page 314. Footnotes appear on page 314.

THE 500 INTERNATIONAL

RANK BY SALES 1988	1987	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	PROFITS Rank	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank	EMPLOYEES Number	EMPLOYEES Rank	INDUSTRY CODE
151	223	BULL	FRANCE	5,297.5	50.9	372	4,461.4	192	842.6	290	45,557	106	44
152	167	BICC	BRITAIN	5,249.4	158.5	216	2,752.5	301	555.2	373	44,738	108	34
153	209	NOKIA	FINLAND	5,204.3	276.4	130	5,460.2	155	1,762.4	144	44,600	109	36
154	148	THORN EMI	BRITAIN	5,201.2	210.0	174	3,836.2	226	1,216.2	200	66,630	71	36
155	234	FLETCHER CHALLENGE	NEW ZEALAND	5,135.1	344.2	94	7,569.5	112	2,121.3	124	41,000	118	26
156	176	SIDERBRÁS	BRAZIL	5,120.6	(7,192.8)	498	12,137.8	61	(1,486.9)	498	75,811	59	33
157	158	DSM	NETHERLANDS	5,120.2	314.7	105	4,168.8	205	1,535.5	169	28,625	168	28
158	484	ARBED	LUXEMBOURG	5,112.0	172.6	199	5,172.8	163	1,169.3	213	53,000	88	33
159	139	L.M. ERICSSON	SWEDEN	5,101.4	214.0	171	5,647.5	150	1,407.1	180	65,138	72	36
160	132	IMPERIAL OIL	CANADA	5,050.5	406.2	81	8,112.0	104	4,840.7	46	12,161	343	29
161	138	KOMATSU	JAPAN	5,049.2	89.8	290	8,329.7	98	3,229.7	75	22,901	218	45
162	174	SHOWA DENKO	JAPAN	4,966.7	143.1	228	4,716.2	180	595.4	359	6,143	435	28
163	160	SCHLUMBERGER	NETHERLANDS ANTILLES	4,924.5	476.2	68	5,600.2	152	2,755.0	93	48,000	99	38
164	157	FUJI HEAVY INDUSTRIES	JAPAN	4,923.9	53.4	364	5,051.8	168	1,523.6	170	15,698	296	40
165	144	CEA-INDUSTRIE	FRANCE	4,904.5	233.2	157	15,321.4	43	1,826.0	139	30,100	159	28
166	164	KUBOTA	JAPAN	4,889.1	133.0	240	5,911.5	142	2,452.9	108	17,500	270	45
167	177	RICOH	JAPAN	4,869.1	123.0	249	5,161.2	164	2,348.8	114	30,500	155	44
168	142	KAWASAKI HEAVY INDUSTRIES	JAPAN	4,862.2	66.6	334	7,605.3	109	663.4	332	19,236	250	37
169	130	ESSO	W. GERMANY	4,856.8	71.4	323	2,169.0	358	753.1	308	2,221	494	29
170	170	COCKERILL SAMBRE	BELGIUM	4,752.6	195.3	182	3,918.9	221	941.5	259	26,306	189	33
171	166	HOESCH	W. GERMANY	4,748.2	37.9	407	3,686.4	235	931.0	265	33,800	139	33
172	274	HÜLS	W. GERMANY	4,6[illegible]5.0	73.2	317	3,144.9	274	855.7	286	27,167	183	28
173	172	DAIHATSU MOTOR	JAPAN	4,652.0	43.5	395	3,423.5	254	810.5	297	18,674	261	40
174	191	HYUNDAI MOTOR	SOUTH KOREA	4,642.5	57.7	355	3,560.2	246	659.7	335	34,000	136	40
175	180	TAKEDA CHEMICAL	JAPAN	4,574.6	273.4	134	6,763.8	124	3,337.7	68	13,854	31[illegible]	42
176	182	FURUKAWA ELECTRIC	JAPAN	4,563.8	103.9	271	5,085.6	166	1,024.2	239	15,259	300	33
177	179	TOYO SEIKAN	JAPAN	4,548.4	161.4	211	3,805.7	229	1,631.0	157	6,107	436	34
178	159	TOA NENRYO KOGYO	JAPAN	4,543.8	273.5	133	5,048.7	169	2,778.8	92	2,286	493	29
179	242	CONTINENTAL	W. GERMANY	4,498.3	112.9	263	3,075.8	278	863.6	284	45,907	105	30
180	127	FELDMÜHLE NOBEL	W. GERMANY	4,495.8	84.4	299	3,242.7	266	1,004.6	243	33,469	143	26
181	245	DAINIPPON INK & CHEMICALS	JAPAN	4,487.8	47.9	380	5,440.6	157	966.6	252	18,694	259	23
182	187	NEWS CORP.	AUSTRALIA	4,383.9	343.6	96	11,004.9	70	4,022.8	56	28,305	173	27
183	165	JACOBS SUCHARD	SWITZERLAND	4,361.6	234.7	155	3,049.1	282	1,318.1	188	16,799	280	20
184	173	L'AIR LIQUIDE	FRANCE	4,303.5	266.0	140	5,264.0	160	1,756.0	146	27,000	184	28
185	200	CADBURY SCHWEPPES	BRITAIN	4,242.3	300.9	113	2,808.2	297	878.9	277	28,874	166	49
186	178	HACI ÖMER SABANCI HOLDING	TURKEY	4,241.7	259.0	143	3,882.4	222	453.7	408	31,372	148	22
187	168	BEECHAM GROUP	BRITAIN	4,223.9	407.7	80	4,772.7	177	2,813.7	91	35,800	133	42
188	189	KANEBO	JAPAN	4,202.9	(19.0)	486	4,810.8	176	91.8	492	24,967	203	22
189	194	STC	BRITAIN	4,198.1	265.2	142	2,960.0	286	1,291.8	192	33.848	137	44
190	206	HYOSUNG	SOUTH KOREA	4,182.8	39.2	404	3,096.5	277	898.0	273	24,500	207	22
191	217	DE BEERS CONSOLIDATED MINES	S. AFRICA	4,168.6	1,431.0	12	6,685.1	126	5,560.1	39	23,117	214	10
192	188	CRA	AUSTRALIA	4,165.0	471.5	69	6,469.9	130	2,964.3	84	21,834	230	34
193	195	COURTAULDS	BRITAIN	4,123.5	244.2	150	3,058.0	280	1,158.5	214	68,500	67	28
194	199	L'ORÉAL	FRANCE	4,104.9	225.9	163	3,471.4	251	1,187.4	208	27,570	180	43
195	238	HACHETTE	FRANCE	4,098.0	55.0	361	3,603.0	242	365.6	435	28,500	171	27
196	190	RANK XEROX	BRITAIN	4,097.5	276.6	128	4,364.8	197	2,124.6	123	30,699	154	44
197	193	ALUSUISSE	SWITZERLAND	4,085.2	213.9	172	3,954.7	218	951.4	257	24,467	208	34
198	117	TÜRKIYE PETROLLERI	TURKEY	4,035.0	297.6	115	3,288.0	260	1,211.5	205	19,891	246	29
199	197	FUJI ELECTRIC	JAPAN	4,028.6	47.6	382	5,181.7	162	960.5	254	17,496	271	36
200	204	OJI PAPER	JAPAN	4,006.6	126.1	245	4,742.3	178	1,475.0	174	5,454	454	26

The definitions and concepts underlying the figures in this directory are explained on page 314. Industry code definitions appear on page 314. Footnotes appear on page 314.

THE 50 INTERNATIONAL

RANK BY SALES 1988	1987	COMPANY	COUNTRY	SALES	PROFITS		ASSETS		STOCKHOLDERS' EQUITY		EMPLOYEES		INDUSTRY CODE ✓
				$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
201	171	OIL & NATURAL GAS COMMISSION	INDIA	4,002.4[7]	1,180.7[7]	17	9,169.6[7]	86	4,699.3[7]	49	43,000[7]	112	29
202	235	HOOGOVENS GROEP	NETHERLANDS	3,980.4	152.2	221	4,510.3	191	966.8	251	28,308	172	33
203	213	PILKINGTON [3,17]	BRITAIN	3,973.1	297.7	114	4,405.7	194	1,550.1	168	56,700	80	32
204	201	TEIJIN [3]	JAPAN	3,891.9	144.8	226	5,819.7	146	1,721.9	148	11,220	358	28
205	203	ASSOCIATED BRITISH FOODS [3]	BRITAIN	3,869.4	185.5	188	3,808.3	228	2,889.4	88	34,638	135	20
206	•	GOLD STAR [18]	SOUTH KOREA	3,857.8	24.8	443	3,242.0	267	589.8	363	36,442	131	36
207	224	UNITED BISCUITS (HOLDINGS)	BRITAIN	3,856.8	291.2	119	2,319.4	349	928.7	266	47,004	104	20
208	212	UBE INDUSTRIES [3]	JAPAN	3,848.1	139.9	230	6,500.1	129	379.2	429	12,578	335	32
209	205	NIPPON SUISAN KAISHA [3]	JAPAN	3,838.9	29.4	431	2,333.9	345	610.3	354	6,242	431	20
210	246	SEKISUI CHEMICAL [3]	JAPAN	3,836.1	101.7	276	3,700.8	233	1,124.1	221	8,135	398	28
211	211	LAFARGE COPPÉE	FRANCE	3,809.2	315.7	104	4,246.5	201	1,438.0	178	22,491	222	32
212	227	NIPPON MEAT PACKERS [3]	JAPAN	3,799.8	72.3	320	2,372.9	340	934.4	263	13,232	326	20
213	220	AISIN SEIKI [3]	JAPAN	3,788.8	72.1	321	2,762.4	299	1,214.5	201	12,427	339	40
214	219	BOC GROUP [4]	BRITAIN	3,756.5	321.7	100	4,086.0	209	1,657.3	154	38,813	125	28
215	210	MITSUBISHI OIL [3]	JAPAN	3,755.1	56.1	359	4,225.1	202	259.5	462	3,385	482	29
216	250	STEEL AUTHORITY OF INDIA [2,3]	INDIA	3,722.0	48.9	377	5,896.3	143	3,115.2	79	201,415	11	33
217	232	KAO [3]	JAPAN	3,719.1	96.2	281	3,630.9	239	1,697.8	152	11,000	360	43
218	259	TATE & LYLE [4]	BRITAIN	3,701.2	124.4	248	2,958.7	287	664.7	330	17,000	279	20
219	215	SULZER BROTHERS	SWITZERLAND	3,701.1	49.5	376	5,027.3	170	1,356.2	185	33,800	138	45
220	229	UNIGATE [3]	BRITAIN	3,686.5	120.9	251	1,588.6	412	626.3	349	34,922	134	20
221	230	RMC GROUP	BRITAIN	3,678.3	199.5	178	2,332.4	347	822.5	293	23,267	212	32
222	251	VAUXHALL MOTORS	BRITAIN	3,648.9	270.6	135	1,298.5	452	146.3	484	10,660	366	40
223	208	PETRONAS [2,3]	MALAYSIA	3,633.0	886.8	31	8,516.7	94	5,753.3	36	7,292	413	29
224	198	ORKEM [2,19]	FRANCE	3,616.9	418.2	78	2,710.1	309	890.4	275	13,500	321	28
225	258	GLAXO HOLDINGS [3]	BRITAIN	3,609.4	1,018.5	22	4,898.3	175	3,048.0	81	26,423	188	42
226	226	YAMAHA MOTOR [3]	JAPAN	3,609.1	58.0	352	3,512.5	248	465.0	407	9,836	377	40
227	225	HYUNDAI HEAVY INDUSTRIES	SOUTH KOREA	3,608.2	59.4	347	4,031.1	214	1,028.8	238	49,300	95	37
228	248	ÖMV [2]	AUSTRIA	3,565.2	27.5	434	3,564.5	245	1,115.2	223	9,352	384	29
229	247	JOHN LABATT [16]	CANADA	3,539.9	107.9	265	2,064.8	370	705.9	320	17,900	268	20
230	214	GKN	BRITAIN	3,539.4	162.5	210	2,805.5	298	1,117.3	222	37,122	129	40
231	175	PETRO-CANADA [2]	CANADA	3,516.5	84.3	300	7,219.1	116	3,282.2	72	7,373	410	29
232	196	ROLLS-ROYCE	BRITAIN	3,514.4	258.3	144	3,222.7	269	1,716.3	149	40,900	119	41
233	290	TRELLEBORG	SWEDEN	3,508.2	153.1	220	3,872.1	223	547.9	375	28,083	177	33
234	222	AJINOMOTO [3]	JAPAN	3,495.1	119.9	254	4,934.4	172	2,475.5	106	9,543	381	20
235	311	NOBEL INDUSTRIES	SWEDEN	3,476.5	106.5	269	5,144.5	165	653.5	338	22,101	226	28
236	218	SKF	SWEDEN	3,463.4	161.2	212	3,976.0	216	1,560.1	166	47,178	103	34
237	331	SUMITOMO RUBBER	JAPAN	3,455.5	39.8	401	3,288.7	259	302.4	451	20,000	244	30
238	192	GUINNESS	BRITAIN	3,436.1	637.7	48	8,617.5	91	5,161.5	43	17,934	267	49
239	•	VOEST-ALPINE STAHL [2]	AUSTRIA	3,433.1	72.4	319	624.0	492	369.7	432	31,273	150	33
240	231	REED INTERNATIONAL [3]	BRITAIN	3,424.0	492.4	64	3,527.4	247	1,857.1	137	31,300	149	27
241	280	SVENSKA CELLULOSA	SWEDEN	3,398.5	237.5	153	4,703.3	183	1,360.1	184	21,315	233	43
242	261	YAMAHA [3,20]	JAPAN	3,376.2	60.0	345	3,195.5	270	1,131.4	218	17,035	278	47
243	236	TOYOBO [3]	JAPAN	3,363.6	45.6	386	3,694.1	234	662.8	334	15,077	303	28
244	257	JUJO PAPER [3]	JAPAN	3,349.6[6]	87.3[6]	294	4,045.9[6]	213	745.9[6]	312	6,883[6]	418	26
245	252	DEUTSCHE TEXACO	W. GERMANY	3,333.3	64.2	336	1,758.4	396	487.8	396	4,359	471	29
246	241	HAWKER SIDDELEY GROUP	BRITAIN	3,327.4	217.0	169	2,970.6	285	1,411.4	179	42,900	113	45
247	228	COATS VIYELLA	BRITAIN	3,303.9	88.5	292	2,592.5	318	1,211.5	204	67,420	69	22
248	270	OKI ELECTRIC INDUSTRY [3]	JAPAN	3,263.1[6]	25.1[6]	442	4,132.4[6]	207	957.3[6]	256	18,659[6]	262	36
249	366	INCO	CANADA	3,263.1	735.4	41	4,078.8	211	767.3	306	18,658	263	10
250	266	NIPPON LIGHT METAL [3]	JAPAN	3,255.6	29.4	430	3,374.5	255	141.4	486	10,500	368	32

The definitions and concepts underlying the figures in this directory are explained on page 314. ✓ Industry code definitions appear on page 314. Footnotes appear on page 314.

THE 50 INTERNATIONAL

RANK BY SALES 1988	1987	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	PROFITS Rank	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank	EMPLOYEES Number	EMPLOYEES Rank	INDUSTRY CODE
251	240	**MATRA**	FRANCE	3,246.0	57.0	356	4,269.9	200	379.7	428	19,479	248	41
252	281	**HINO MOTORS**[3]	JAPAN	3,241.8[6]	28.5[6]	432	1,978.1[6]	379	662.9[6]	333	8,095[6]	399	40
253	239	**GALLAHER**	BRITAIN	3,240.2	269.0	137	2,446.4	334	831.9	291	31,918	146	21
254	268	**LUCAS INDUSTRIES**[21]	BRITAIN	3,228.1	161.1	213	2,456.1	331	1,130.5	219	59,047	76	40
255	256	**TDK**[9]	JAPAN	3,221.1	173.3	198	4,077.5	212	2,303.7	117	19,646	247	36
256	271	**YAMAZAKI BAKING**	JAPAN	3,200.9[6]	70.2[6]	326	2,111.1[6]	363	1,036.1[6]	236	15,919[6]	294	20
257	375	**NOVA**	CANADA	3,195.4[5]	343.8	95	6,909.8	123	1,7[illegible]0.3	150	13,000	328	28
258	•	**MO OCH DOMSJO**	SWEDEN	3,191.2	37.2	409	4,305.7	199	427.2	414	16,714	281	26
259	255	**KONICA**[22]	JAPAN	3,175.7	12.7	468	3,843.0	225	1,372.1	183	22,000	228	38
260	277	**AVIONS MARCEL DASSAULT**	FRANCE	3,160.2	63.8	338	5,923.3	141	494.1	391	16,327	285	41
261	263	**MITSUI TOATSU CHEMICALS**[3]	JAPAN	3,156.9	53.6	363	4,706.9	182	400.8	421	11,000	361	28
262	318	**CODELCO-CHILE**[2]	CHILE	3,153.0	587.3	52	4,715.1	181	2,379.2	110	25,468	197	10
263	221	**CEPSA (ESPAÑOLA DE PETRÓLEOS)**	SPAIN	3,118.3	106.7	268	1,773.8	391	889.7	276	5,697	444	29
264	284	**TEXACO**	BRITAIN	3,114.3	0.5	480	1,528.7	422	655.2	337	3,358	484	29
265	286	**PIONEER ELECTRONIC**[4]	JAPAN	3,089.8	137.2	234	2,369.6	341	1,342.4	186	12,942	329	36
266	249	**HEINEKEN**	NETHERLANDS	3,087.9[5]	147.1	224	3,266.6	263	1,384.7	182	28,719	167	49
267	434	**REDLAND**	BRITAIN	3,079.5	286.1	122	2,512.0	326	1,113.1	226	20,029	243	32
268	298	**MITSUBISHI PETROCHEMICAL**	JAPAN	3,068.0	198.1	180	4,321.7	198	1,000.1	246	3,793	478	28
269	260	**GENERAL SEKIYU**[3]	JAPAN	3,055.2	57.9	353	2,522.8	323	687.7	326	1,750	498	29
270	275	**SHISEIDO**[9]	JAPAN	3,045.6	73.3	316	4,108.3	208	2,003.0	130	18,902	254	43
271	243	**NIXDORF COMPUTER**	W. GERMANY	3,042.3	16.4	460	2,726.7	306	1,592.3	163	31,037	152	44
272	310	**GENERAL MOTORS ESPAÑA**	SPAIN	3,023.1	239.5	152	1,471.6	431	501.0	388	9,763	378	40
273	264	**SCHERING**	W. GERMANY	2,999.7	89.4	291	3,158.6	273	1,142.6	216	24,685	206	28
274	296	**IBM CANADA**	CANADA	2,994.3	210.8	173	2,495.0	327	1,582.8	164	12,605	334	44
275	216	**SAARBERGWERKE**[2]	W. GERMANY	2,972.4	(48.2)	491	2,563.8	320	180.3	477	24,977	202	29
276	278	**HONSHU PAPER**[3]	JAPAN	2,967.5	26.8	437	4,567.4	188	332.6	443	7,703	407	26
277	265	**DEUTSCHE BABCOCK**[4]	W. GERMANY	2,960.6	22.4	446	1,401.0	443	395.1	423	22,451	223	34
278	293	**RANKS HOVIS MCDOUGALL**[23]	BRITAIN	2,951.9	143.6	227	2,736.6	303	1,561.7	165	38,195	126	20
279	373	**ASAHI BREWERIES**	JAPAN	2,932.1	33.3	424	5,977.7	139	1,099.3	230	6,222	432	49
280	269	**PROCORDIA**[2]	SWEDEN	2,925.3	316.5	103	2,898.9	290	1,136.0	217	29,111	165	42
281	297	**SANYO-KOKUSAKU PULP**[3]	JAPAN	2,902.3	69.7	328	3,162.2	272	677.6	328	7,436	408	26
282	273	**SNECMA**[2]	FRANCE	2,901.2	(4.5)	483	4,371.3	195	271.9	461	25,399	199	41
283	285	**SANKYO**[3]	JAPAN	2,892.9	84.9	297	2,849.8	293	1,305.1	189	9,234	386	42
284	•	**HONAM OIL REFINERY**[18]	SOUTH KOREA	2,867.2	36.2	412	1,593.0	411	290.7	455	1,881	497	29
285	237	**NISSAN SHATAI**[3]	JAPAN	2,836.6[6]	14.4[6]	465	1,109.4[6]	470	485.7[6]	398	5,533[6]	449	40
286	412	**BHARAT PETROLEUM**[2,3]	INDIA	2,822.3	58.7	349	820.1	481	258.4	464	10,203	372	29
287	288	**SEAGRAM**[11]	CANADA	2,798.8	521.1	61	7,543.5	113	4,457.5	52	13,400	324	49
288	295	**MEIJI MILK PRODUCTS**[3]	JAPAN	2,792.0	20.9	450	1,288.7	454	409.1	418	7,408	409	20
289	332	**TOYO SASH**[4]	JAPAN	2,776.7	139.3	231	2,655.8	313	1,008.4	242	4,709	465	34
290	320	**VALEO**	FRANCE	2,766.9	137.2	233	2,258.7	353	830.9	292	29,400	162	40
291	•	**BOND CORP. HOLDINGS**[1]	AUSTRALIA	2,757.4	199.2	179	7,162.7	119	708.1	319	10,408	370	49
292	313	**DAIDO STEEL**[3]	JAPAN	2,754.9[7]	34.8[7]	420	2,884.8	292	544.4	376	10,570	367	33
293	279	**HOLDERBANK FINANCIÈRE GLARIS**	SWITZ.	2,739.4[5]	154.6	219	5,389.5	158	1,873.6	136	23,063	216	32
294	303	**ZAHNRADFABRIK FRIEDRICHSHAFEN**	W. GER.	2,715.5	48.8	378	2,119.3	361	372.0	431	25,683	194	40
295	294	**FORD ESPAÑA**[7]	SPAIN	2,708.1[7]	256.7[7]	145	1,573.2	415	176.6	478	9,548	380	40
296	305	**NISSHIN STEEL**[3]	JAPAN	2,698.2	99.7	279	4,148.5	206	976.3	250	8,557	393	33
297	289	**ENTREPRISE MINIÈRE & CHIMIQUE**[2]	FRANCE	2,686.8	12.5	469	1,547.6	420	147.3	483	13,136	327	28
298	272	**OERLIKON-BÜHRLE**	SWITZERLAND	2,679.9	24.5	444	5,655.4	149	2,244.7	119	27.763	179	45
299	304	**ABITIBI-PRICE**	CANADA	2,679.3	154.9	218	2,205.4	356	1,113.2	225	16,200	289	26
300	324	**SANDVIK**	SWEDEN	2,675.3	209.8	175	3,368.0	256	842.9	289	26,501	187	34

The definitions and concepts underlying the figures in this directory are explained on page 314. Industry code definitions appear on page 314. Footnotes appear on page 314.

THE 50 INTERNATIONAL

RANK BY SALES 1988	1987	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	Rank	ASSETS $ Millions	Rank	STOCKHOLDERS' EQUITY $ Millions	Rank	EMPLOYEES Number	Rank	INDUSTRY CODE ✓
301	300	ALPS ELECTRIC [3]	JAPAN	2,671.5	59.1	348	3,074.3	279	1,037.2	235	14,199	311	36
302	334	TOYODA AUTOMATIC LOOM WORKS [3]	JAPAN	2,659.2[6]	75.8[6]	311	1,995.6[6]	376	1,170.7[6]	212	6,697[6]	424	40
303	326	ONODA CEMENT [3]	JAPAN	2,641.9	72.5	318	3,722.0	231	664.5	331	6,890	417	32
304	262	KOOR INDUSTRIES	ISRAEL	2,638.7	(232.8)	494	3,097.3	276	315.6	447	26,000	191	36
305	353	DAF	NETHERLANDS	2,631.2	74.4	314	1,742.8	398	584.0	364	16,491	283	40
306	308	LVMH	FRANCE	2,629.4	336.4	99	4,671.9	184	1,608.9	159	12,355	340	49
307	325	ITOHAM FOODS [4]	JAPAN	2,617.0	43.0	397	1,462.5	433	768.0	305	6,852	419	20
308	291	HINDUSTAN PETROLEUM [2,3]	INDIA	2,614.6	78.4	306	1,009.0	475	255.4	466	8,710	390	29
309	381	PACIFIC DUNLOP [1]	AUSTRALIA	2,607.1[6]	(29.3)[6]	487	2,073.9[6]	369	712.6[6]	317	36,605[6]	130	30
310	233	MOBIL OIL	W. GERMANY	2,591.5	51.8	369	1,129.2	468	346.1	440	2,140	496	29
311	282	TABACALERA [2]	SPAIN	2,570.6[6]	83.9[6]	302	1,447.2[6]	435	425.6[6]	415	8,492[6]	394	21
312	244	ESSO	FRANCE	2,569.1	20.2	453	1,305.9	451	448.0	410	3,538	480	29
313	329	KHD	W. GERMANY	2,566.5	(41.9)	488	2,110.5	364	252.9	467	18,751	256	45
314	328	YOKOHAMA RUBBER	JAPAN	2,555.0	44.3	391	2,512.3	325	392.7	425	10,751	365	30
315	302	MOORE	CANADA	2,544.0	186.0	186	1,847.6	389	1,292.4	190	25,943	193	27
316	401	PIONEER INTERNATIONAL [2,4]	AUSTRALIA	2,497.0	120.9	252	2,579.1	319	1,022.8	241	9,200	388	29
317	283	RECKITT & COLMAN	BRITAIN	2,483.2	227.9	161	1,735.7	399	940.1	261	21,700	232	43
318	312	NISSHIN FLOUR MILLING [1]	JAPAN	2,476.2	44.7	389	1,492.7	428	628.2	346	3,505	481	20
319	426	KYMMENE	FINLAND	2,474.9	399.0	82	4,370.2	196	1,757.6	145	16,287	287	26
320	•	BOWATER INDUSTRIES	BRITAIN	2,469.4	101.0	277	1,607.4	409	591.9	361	20,300	241	26
321	306	CANADA PACKERS [3]	CANADA	2,459.3	28.4	433	660.0	491	321.6	444	12,000	348	20
322	341	BURMAH OIL	BRITAIN	2,433.0	162.8	209	1,690.4	403	742.6	313	10,919	363	29
323	267	KF INDUSTRI	SWEDEN	2,432.3	70.7	324	1,772.7	393	363.5	436	12,858	331	45
324	402	DOFASCO	CANADA	2,418.2[5]	180.0	195	4,084.7	210	1,777.3	141	22,800	220	33
325	322	KLÖCKNER-WERKE [4]	W. GERMANY	2,408.4	0.2	481	2,474.5	329	276.0	460	22,061	227	33
326	327	HERAEUS HOLDING	W. GERMANY	2,405.6	25.6	44[illegible]	1,174.8	465	494.0	392	9,067	389	33
327	254	ESSO ITALIANA	ITALY	2,404.6[6]	18.4[6]	455	1,272.2[6]	457	106.3[6]	490	2,318[6]	492	29
328	356	SOURCE PERRIER	FRANCE	2,403.7	179.8	196	2,368.0	342	375.9	430	11,000	362	49
329	337	UNITIKA [3]	JAPAN	2,392.1[6]	14.7[6]	463	2,644.0[6]	315	192.0[6]	476	6,674[6]	425	22
330	346	MORINAGA MILK INDUSTRY [1]	JAPAN	2,384.2	20.7	452	1,392.8	445	391.1	427	5,110	458	20
331	450	SABIC [2]	SAUDI ARABIA	2,369.9[5]	982.7	24	7,197.7	118	2,861.3	89	8,416	395	28
332	315	BOEHRINGER INGELHEIM	W. GERMANY	2,361.9	41.0	400	2,664.2	312	1,022.8	240	22,206	224	42
333	202	MCDERMOTT INTERNATIONAL [1]	PANAMA	2,351.7	(261.8)	495	3,824.8	227	741.2	314	26,000	192	45
334	333	ESSELTE	SWEDEN	2,347.8	134.3	239	1,906.8	384	297.6	452	19,310	249	44
335	301	COAL INDIA [2,3]	INDIA	2,341.6[7]	N.A.		5,243.7[7]	161	2,828.9[7]	90	670,000[7]	1	10
336	359	ENSO-GUTZEIT [1]	FINLAND	2,337.2	235.9	154	3,944.0	220	1,108.3	227	17,163	275	26
337	348	RACAL ELECTRONICS [1]	BRITAIN	2,327.7	150.1	223	2,520.7	324	865.4	282	31,910	147	36
338	364	KANTO AUTO WORKS [1]	JAPAN	2,320.5[6]	17.8[6]	457	684.8[6]	489	194.9[6]	475	5,761[6]	442	40
339	354	WHITBREAD [4]	BRITAIN	2,318.7	218.3	168	3,594.2	243	1,991.6	132	49,174	96	49
340	342	RAUMA-REPOLA	FINLAND	2,318.4	166.2	205	3,573.9	244	940.9	260	18,547	264	26
341	•	OUTOKUMPU [2]	FINLAND	2,315.1	38.9	405	2,837.6	294	312.3	448	13,832	316	33
342	351	ISCOR [1,2]	SOUTH AFRICA	2,314.0	119.4	256	2,533.1	322	1,753.5	147	54,525	85	33
343	314	LION	JAPAN	2,306.1[6]	18.5[6]	454	1,770.6[6]	394	631.8[6]	345	5,093[6]	459	43
344	321	SSAB SVENSKT STÅL [2]	SWEDEN	2,298.9	26.4	439	2,161.3	359	544.1	377	12,801	333	33
345	422	ZAMBIA INDUSTRIAL & MINING [2,3]	ZAMBIA	2,285.9	157.2	217	4,193.6	204	1,102.8	229	140,408	26	10
346	362	MITSUI MINING & SMELTING [1]	JAPAN	2,284.0	30.7	428	2,829.4	295	136.1	487	6,714	422	33
347	379	OMRON TATEISI ELECTRONICS [1]	JAPAN	2,281.8	78.1	307	2,647.1	314	1,227.0	199	13,851	315	36
348	407	TOTO [1]	JAPAN	2,280.0[6]	107.5[6]	266	2,266.1[6]	352	1,045.5[6]	234	8,570[6]	392	32
349	352	DAISHOWA PAPER [1]	JAPAN	2,276.1	73.8	315	3,948.2	219	400.3	422	5,275	456	26
350	317	PLESSEY	BRITAIN	2,215.5	223.3	165	2,436.6	335	1,174.3	211	30,138	157	36

The definitions and concepts underlying the figures in this directory are explained on page 314. ✓ Industry code definitions appear on page 314. Footnotes appear on page 314.

THE 50 INTERNATIONAL

RANK BY SALES		COMPANY	COUNTRY	SALES	PROFITS		ASSETS		STOCKHOLDERS' EQUITY		EMPLOYEES		INDUSTRY CODE ✓
1988	1987			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
351	377	WELLCOME [23]	BRITAIN	2,212.2	224.9	164	2,113.2	362	1,098.0	231	20,236	242	42
352	307	ROTHMANS INTERNATIONAL [3]	BRITAIN	2,210.2	228.2	160	3,181.6	271	1,197.7	206	13,991	313	21
353	343	KEMIRA [2]	FINLAND	2,201.0	117.0	259	3,045.7	283	702.0	321	14,857	305	28
354	349	STELCO	CANADA	2,198.5	78.5	305	2,394.3	337	988.4	248	16,207	288	33
355	339	UNION INTERNATIONAL	BRITAIN	2,196.8	31.7	427	1,270.2	458	349.2	438	23,161	213	20
356	345	DOMTAR	CANADA	2,191.6	90.0	289	2,671.0	311	1,069.8	233	16,053	291	26
357	368	NICHIRO GYOGYO KAISHA [9]	JAPAN	2,177.5	10.2	470	1,277.4	456	100.2	491	2,855	488	20
358	363	MITSUBISHI MINING & CEMENT [3]	JAPAN	2,174.7	35.5	415	2,893.8	291	556.1	372	6,459	428	32
359	378	KYOCERA [3]	JAPAN	2,171.8	163.9	208	3,632.0	238	2,662.0	100	19,000	253	36
360	323	SHIN-ETSU CHEMICAL [3]	JAPAN	2,157.6	106.8	267	3,235.1	268	1,087.3	232	10,074	374	28
361	383	NIPPON SEIKO [16]	JAPAN	2,155.7	44.1	393	3,254.5	265	1,290.4	193	11,572	355	45
362	417	PEARSON	BRITAIN	2,127.9	313.0	106	2,377.6	339	849.1	288	26,017	190	27
363	292	HITACHI ZOSEN [3]	JAPAN	2,123.7	68.1	330	4,655.5	186	492.4	393	5,596	446	45
364	358	JOHNSON MATTHEY [3]	BRITAIN	2,117.4	75.3	312	940.6	476	482.0	401	6,940	416	33
365	384	AMCOR [1]	AUSTRALIA	2,112.3	109.4	264	1,965.8	380	869.3	281	16,000	293	26
366	387	METAL BOX [3]	BRITAIN	2,110.6	100.0	278	1,636.9	405	602.5	358	28,188	174	34
367	347	MINOLTA CAMERA [3]	JAPAN	2,104.7[6]	18.0[6]	456	2,542.0[6]	321	723.6[6]	315	12,490[6]	336	38
368	360	TOYOTA AUTO BODY [3]	JAPAN	2,090.4[6]	16.2[6]	461	761.1[6]	485	235.3[6]	469	6,787[6]	420	40
369	361	ATLAS COPCO	SWEDEN	2,088.3	103.2	272	1,945.7	382	690.9	324	19,207	251	45
370	355	MEIJI SEIKA [3]	JAPAN	2,070.4	21.7	449	1,476.3	430	812.0	295	5,465	453	20
371	336	SUMITOMO HEAVY INDUSTRIES [3]	JAPAN	2,062.8	3.2	475	3,460.6	252	496.4	389	6,000	440	45
372	460	COOKSON GROUP	BRITAIN	2,055.9	184.2	189	1,984.6	378	901.7	272	14,351	309	33
373	388	MITSUBISHI RAYON [3]	JAPAN	2,051.9	36.4	411	2,728.1	305	697.7	322	7,237	415	28
374	389	KURARAY [3]	JAPAN	2,032.9	26.4	440	2,452.9	333	404.4	420	7,237	414	22
375	397	VALMET [2]	FINLAND	2,031.7	0.7	479	2,050.0	371	614.0	352	17,405	273	45
376	380	LINDE	W. GERMANY	2,027.6	69.9	327	1,580.2	413	627.9	347	15,890	295	45
377	399	INDÚSTRIAS VOTORANTIM	BRAZIL	2,027.0	686.4	44	1,990.0	377	1,558.8	167	56,000	83	10
378	415	BORAL [1]	AUSTRALIA	2,022.8	171.6	202	2,108.9	365	918.4	269	21,000	237	32
379	371	ALFA-LAVAL	SWEDEN	2,021.4[5]	120.1	253	2,357.4	344	487.8	395	17,156	276	45
380	367	FREUDENBERG	W. GERMANY	2,011.2[5]	81.2	303	1,573.9	414	592.7	360	23,500	210	40
381	436	MAXWELL COMMUNICATION	BRITAIN	2,010.2	241.5	151	N.A.		1,808.5[7]	140	30,000	160	27
382	374	BLUE CIRCLE INDUSTRIES	BRITAIN	2,003.9	256.0	146	3,336.1	258	1,603.8	161	16,303	286	32
383	396	SHIONOGI [3]	JAPAN	1,999.2	84.3	301	2,333.7	346	1,231.4	198	8,181	397	42
384	382	KYOWA HAKKO KOGYO	JAPAN	1,995.4	104.1	270	2,757.2	300	991.8	247	6,000	439	42
385	365	FAG KUGEL. G. SCHÄFER	W. GERMANY	1,992.5	34.9	417	1,936.2	383	553.0	374	30,218	156	34
386	430	DOOSAN	SOUTH KOREA	1,963.6	32.5	426	2,083.2	368	492.3	394	15,175	302	49
387	299	VALE DO RIO DOCE [2]	BRAZIL	1,963.4	607.1	51	5,992.5	138	2,667.9	99	28,501	169	10
388	372	PERNOD RICARD	FRANCE	1,961.5	125.1	247	2,367.7	343	773.3	303	10,009	375	49
389	420	DOUWE EGBERTS [1]	NETHERLANDS	1,957.0	118.1	257	1,195.5	462	142.7	485	11,741	353	20
390	462	VARITY [11]	CANADA	1,948.9	4.5	473	1,623.4	407	438.1	413	16,330	284	45
391	392	PWA	W. GERMANY	1,947.6	45.6	385	1,263.2	459	317.7	445	10,402	371	26
392	395	CITIZEN WATCH [3]	JAPAN	1,929.0	37.1	410	2,017.3	373	807.6	298	12,468	338	38
393	370	WESSANEN	NETHERLANDS	1,925.5	46.8	383	557.6	495	292.9	454	6,571	427	20
394	386	CONSOLIDATED-BATHURST	CANADA	1,923.3	194.3	183	1,955.5	381	873.8	278	14,623	306	26
395	385	ULTRAMAR	BRITAIN	1,918.8	102.2	275	3,473.9	250	1,444.8	176	3,878	477	29
396	398	JAGUAR	BRITAIN	1,915.8	50.6	373	1,296.5	453	507.8	386	12,835	332	40
397	411	MITSUI PETROCHEMICAL [3]	JAPAN	1,913.2	63.1	340	3,276.5	261	683.7	327	4,938	463	28
398	486	PROCTER & GAMBLE [1]	W. GERMANY	1,905.9	43.8	394	934.2	477	206.0	472	6,700	423	43
399	330	CSR [3]	AUSTRALIA	1,904.3	132.4	241	3,274.8	262	1,514.8	171	16,133	290	32
400	376	MITSUI MINING [3]	JAPAN	1,899.9	13.8	466	2,305.1	349	123.6	488	2,146	495	10

The definitions and concepts underlying the figures in this directory are explained on page 314. ✓ Industry code definitions appear on page 314. Footnotes appear on page 314.

THE 50 INTERNATIONAL

450

RANK BY SALES 1988	1987	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	Rank	ASSETS $ Millions	Rank	STOCKHOLDERS' EQUITY $ Millions	Rank	EMPLOYEES Number	Rank	INDUSTRY CODE ✓
401	458	NISSAN DIESEL MOTOR [3]	JAPAN	1,883.9[6]	2.1[6]	476	2,233.2[6]	354	406.0[6]	419	5,404[6]	455	40
402	338	TEXACO CANADA	CANADA	1,882.7	270.0	136	3,434.8	253	1,668.3	153	3,236	486	29
403	403	CARL-ZEISS-STIFTUNG [4]	W. GERMANY	1,871.4	24.4	445	1,515.2	426	286.1	458	24,910	204	38
404	429	NIHON CEMENT [3]	JAPAN	1,869.1[7]	70.4[7]	325	3,052.4	281	665.0	329	5,080	460	32
405	413	T&N	BRITAIN	1,868.2	125.4	246	1,524.0	424	709.7	318	40,859	120	40
406	449	FORD MOTOR	AUSTRALIA	1,862.7	74.5	313	1,067.2	473	417.6	417	11,938	350	40
407	425	MITSUBISHI GAS CHEMICAL [3]	JAPAN	1,857.0	37.6	408	2,379.7	338	784.5	301	5,569	447	28
408	394	E. MERCK	W. GERMANY	1,854.1[5]	92.8	285	1,718.1	400	748.2	311	21,017	236	28
409	421	YOSHIDA KOGYO [3]	JAPAN	1,852.4	114.1	262	3,851.8	224	1,175.3	210	15,327	299	32
410	393	RHEINMETALL BERLIN	W. GERMANY	1,850.3	44.7	390	1,238.3	460	315.9	446	15,465	297	34
411	455	NAN YA PLASTICS	TAIWAN	1,840.4	134.8	236	1,525.0	423	626.4	348	13,679	317	28
412	423	GRUNDIG [3]	W. GERMANY	1,832.3	65.6	335	1,334.2	450	482.9	400	18,748	257	36
413	410	NTN TOYO BEARING [25]	JAPAN	1,831.8	39.8	402	2,704.7	310	918.1	270	10,475	369	45
414	428	RENGO [3]	JAPAN	1,831.6[6]	16.7[6]	458	1,386.0[6]	446	311.9[6]	449	4,434[6]	469	26
415	424	SAPPORO BREWERIES	JAPAN	1,826.7	49.6	375	3,969.6	217	943.9	258	4,543	467	49
416	408	UNION LAITIÈRE NORMANDE	FRANCE	1,823.8	15.5	462	677.9	490	84.0	493	5,690	445	20
417	400	IVACO	CANADA	1,814.9	34.0	422	1,556.4	419	485.3	399	12,000	349	33
418	390	DAIKIN INDUSTRIES [3]	JAPAN	1,813.3[6,7]	35.6[6,7]	414	1,629.8[6]	406	505.7[6]	387	8,000[6]	402	45
419	457	GRUPO INDUSTRIAL ALFA	MEXICO	1,812.9	636.6	49	3,354.2	257	1,213.5	203	29,182	164	33
420	409	METSÄ-SERLA	FINLAND	1,812.0	159.8	215	2,719.2	307	798.0	300	12,116	344	26
421	443	EBARA [3]	JAPAN	1,803.5[6,7]	52.7[6,7]	367	2,021.0[6]	372	647.4[6]	341	5,884[6]	441	45
422	•	BBA GROUP	BRITAIN	1,802.5	78.9	304	1,401.0	442	452.3	409	24,828	205	40
423	•	SIEBE [3]	BRITAIN	1,799.7	117.4	258	1,897.1	385	765.8	307	28,169	175	36
424	496	GENERAL MOTORS DO BRASIL	BRAZIL	1,798.5	284.5	123	1,442.3	437	938.8	262	21,855	229	40
425	406	AECI	SOUTH AFRICA	1,796.1	115.3	260	1,189.6	463	478.3	403	28,500	170	28
426	440	CASIO COMPUTER [25]	JAPAN	1,787.5	34.2	421	2,087.0	367	896.8	274	6,147	434	36
427	340	EMPRESA COL. DE PETRÓL. [2]	COLOMBIA	1,783.0	(46.6)	490	2,414.3	336	N.A.		12,113	345	29
428	476	CONSOLIDATED GOLD FIELDS [1]	BRITAIN	1,761.8	372.5	86	3,263.1	264	1,105.1	228	14,029	312	32
429	439	LIEBHERR-INTERNATIONAL	SWITZERLAND	1,757.4	58.1	351	1,162.1	467	605.2	357	13,601	318	45
430	454	DENKI KAGAKU KOGYO [3]	JAPAN	1,749.5	62.3	343	2,923.2	288	656.3	336	5,561	448	28
431	437	JEFFERSON SMURFIT GROUP [11]	IRELAND	1,742.2	92.2	287	1,372.7	447	366.6	433	15,240	301	26
432	335	NORTHERN FOODS [2]	BRITAIN	1,735.8	69.5	329	860.4	479	521.4	382	23,077	215	20
433	442	PRIMA MEAT PACKERS [3]	JAPAN	1,726.5	5.1	472	763.7	484	147.5	482	5,023	461	20
434	•	FALCONBRIDGE	CANADA	1,722.0	276.6	129	2,186.2	357	986.5	249	9,380	383	10
435	451	TI GROUP	BRITAIN	1,708.1	255.1	147	1,115.5	469	420.5	416	20,700	238	34
436	495	KOKUYO [4]	JAPAN	1,696.8[6]	66.9[6]	333	1,404.5[6]	441	624.7[6]	350	2,796[6]	489	25
437	432	MD FOODS [4,26]	DENMARK	1,690.9[6]	92.3[6]	286	609.2[6]	494	163.6[6]	481	5,517[6]	450	20
438	•	COBERCO	NETHERLANDS	1,690.0	966.6	25	520.1	496	60.1	495	3,337	485	20
439	463	DIESEL KIKI [8]	JAPAN	1,684.5	26.5	438	1,767.1	395	575.1	366	7,900	404	40
440	446	SASOL [1]	SOUTH AFRICA	1,669.5	227.3	162	2,476.6	328	1,404.1	181	32,300	145	28
441	•	CIMENTS FRANÇAIS	FRANCE	1,667.2	134.5	237	1,788.9	390	652.6	339	9,343	385	32
442	465	Q.P. [9]	JAPAN	1,663.5	27.4	435	1,284.8	455	476.1	405	3,942	476	20
443	•	ENGLISH CHINA CLAYS [4]	BRITAIN	1,660.5	164.5	206	1,707.4	401	872.4	280	13,297	325	10
444	456	TOSOH [3]	JAPAN	1,656.2	29.5	429	3,137.7	275	542.8	378	6,000	438	28
445	•	LUCKY [18]	SOUTH KOREA	1,647.4	86.9	295	1,516.1	425	557.0	371	9,421	382	28
446	•	PT ASTRA INTERNATIONAL	INDONESIA	1,642.6[5]	50.4	374	352.1	497	82.2	494	27,448	181	40
447	469	HEWLETT-PACKARD [8]	W. GERMANY	1,641.0	41.1	399	796.4	483	215.2	471	5,484	452	44
448	•	AMOCO CANADA PETROLEUM	CANADA	1,635.2	(42.4)	489	6,071.8	136	634.2	344	5,000	462	29
449	433	BESNIER	FRANCE	1,632.9	63.4	339	274.5	498	20.3	496	5,745	443	20
450	447	BHARAT HEAVY ELECTRICALS [5,3]	INDIA	1,632.8	62.5	342	2,456.4	330	510.0	385	74,813	63	36

The definitions and concepts underlying the figures in this directory are explained on page 314. ✓ Industry code definitions appear on page 314. Footnotes appear on page 314.

THE 50 INTERNATIONAL

RANK BY SALES		COMPANY	COUNTRY	SALES	PROFITS		ASSETS		STOCKHOLDERS' EQUITY		EMPLOYEES		INDUSTRY CODE ›
1988	1987			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
451	•	DOW CHEMICAL CANADA	CANADA	1,629.2	294.4	116	1,697.5	402	440.0	412	3,099	487	28
452	441	ASCOM HOLDING	SWITZERLAND	1,628.8[5]	35.7	413	1,447.0	436	613.9	353	14,590	308	36
453	•	METAL. HOBOKEN-OVERPELT [4]	BELGIUM	1,621.6[6]	22.3[6]	447	1,168.3[6]	466	289.8[6]	456	6,754[6]	421	33
454	419	AXEL SPRINGER VERLAG	W. GERMANY	1,617.4	53.2	365	718.4	488	240.4	468	11,594	354	27
455	479	AICHI MACHINE INDUSTRY [3]	JAPAN	1,612.7[6]	14.5[6]	464	719.0[6]	487	225.1[6]	470	4,313[6]	473	40
456	448	IMI	BRITAIN	1,607.6[5]	128.1	243	1,349.9	449	591.7	362	20,444	240	34
457	404	RHEINISCHE BRAUNKOHLENWERKE	W. GER.	1,607.1[6]	1.6[6]	477	3,709.9[6]	232	521.3[6]	383	16,045[6]	292	10
458	431	SAGEM	FRANCE	1,607.0	21.9	448	1,208.8	461	197.2	473	17,400	274	36
459	492	IBM ESPAÑA	SPAIN	1,606.1	183.7	190	847.0	480	470.4	406	4,342	472	44
460	464	TOYO TIRE & RUBBER [3]	JAPAN	1,605.6	27.3	436	1,560.1	417	172.8	479	9,204	387	30
461	477	NIPPON SHEET GLASS [3]	JAPAN	1,604.4	48.1	379	2,286.2	350	811.0	296	3,653	479	32
462	391	AGA	SWEDEN	1,598.2	90.3	288	2,454.9	332	643.6	342	13,543	320	28
463	350	CHARBONNAGES DE FRANCE [2]	FRANCE	1,595.8	(374.5)	496	4,724.4	179	195.7	474	30,137	158	10
464	•	CARNAUD	FRANCE	1,588.0	88.5	293	1,459.5	434	485.8	397	11,749	352	34
465	498	NGK INSULATORS [3]	JAPAN	1,586.7	54.4	362	1,889.5	386	815.6	294	7,800	406	32
466	435	FREEGOLD [4]	SOUTH AFRICA	1,583.8	151.6	222	2,010.5	375	1,701.3	151	104,569	42	10
467	452	NISSHINBO INDUSTRIES [27]	JAPAN	1,581.1[6]	57.7[6]	354	2,137.2[6]	360	1,034.8[6]	237	7,930[6]	403	22
468	•	GOODMAN FIELDER WATTIE [1]	AUSTRALIA	1,572.2	71.7	322	2,710.6	308	965.3	253	20,000	245	20
469	461	UNIÓN EXPLOSIVOS RIO TINTO	SPAIN	1,562.2[6]	45.3[6]	387	1,537.0[6]	421	395.0[6]	424	6,670[6]	426	28
470	481	KANEGAFUCHI CHEM. INDUSTRY [3]	JAPAN	1,558.6	56.8	357	1,853.1	387	752.4	309	4,600	466	28
471	•	TANABE SEIYAKU [3]	JAPAN	1,556.9[7]	67.5[7]	331	1,758.0	397	773.0	304	5,126	457	42
472	482	EZAKI GLICO [3]	JAPAN	1,553.2	33.6	423	1,424.5	438	570.5	368	3,377	483	20
473	497	TATUNG	TAIWAN	1,551.3	50.9	371	1,479.0	429	279.7	459	21,108	234	36
474	•	NINTENDO [23]	JAPAN	1,544.8	228.3	159	1,561.7	416	926.4	268	1,096	500	36
475	467	MOLSON [1]	CANADA	1,540.6	60.1	344	1,106.3	471	479.0	402	11,400	356	49
476	•	CHINA STEEL [1,2]	TAIWAN	1,537.9	409.5	79	4,644.9	187	3,404.4	66	9,662	379	34
477	•	EUROC	SWEDEN	1,531.7[5]	191.7	184	1,772.7	392	310.8	450	8,085	400	32
478	470	WACKER-CHEMIE	W. GERMANY	1,531.7	34.9	418	924.2	478	361.9	437	12,074	346	28
479	•	FUJIKURA [3]	JAPAN	1,528.5	39.5	403	2,012.6	374	606.3	355	7,300	412	33
480	480	TAIO PAPER MANUFACTURING [3]	JAPAN	1,524.7[6]	44.2[6]	392	2,088.8[6]	366	530.0[6]	380	2,787[6]	490	26
481	488	MURATA MANUFACTURING [25]	JAPAN	1,523.4	128.6	242	2,822.4	296	1,656.4	155	17,761	269	36
482	472	SEITA [2]	FRANCE	1,518.9	77.5	308	1,637.9	404	440.3	411	6,423	429	21
483	•	UNITED PAPER MILLS	FINLAND	1,502.9	231.6	158	2,641.1	316	1,157.6	215	9,932	376	26
484	•	SCHINDLER HOLDING	SWITZERLAND	1,500.8	58.2	350	1,405.4	440	532.4	379	22,752	221	37
485	•	DILLINGER HÜTTENWERKE	W. GERMANY	1,499.5[6]	16.4[6]	459	759.9[6]	486	258.9[6]	463	6,005[6]	437	33
486	485	CARLSBERG [4]	DENMARK	1,499.5	84.8	298	1,557.2	418	574.5	367	13,595	319	49
487	444	CONOCO	BRITAIN	1,498.6	119.9	255	1,359.8	448	902.8	271	1,492	499	29
488	•	GLYNWED INTERNATIONAL	BRITAIN	1,495.9	96.0	283	1,022.7	474	332.9	442	12,472	337	34
489	•	ELKEM	NORWAY	1,495.2	43.1	396	1,397.9	444	166.6	480	7,805	405	33
490	•	SANKYO ALUMINUM INDUSTRY [13]	JAPAN	1,484.1[6]	13.4[6]	467	1,470.8[6]	432	346.5[6]	439	4,929[6]	464	34
491	•	BPB INDUSTRIES [3]	BRITAIN	1,481.2	190.9	185	1,422.4	439	855.0	287	11,810	351	32
492	•	ALCOA OF AUSTRALIA	AUSTRALIA	1,480.6	281.3	125	2,271.3	351	1,213.7	202	6,382	430	10
493	418	MITSUI ENGINEERING & SHIPBLDG. [3]	JAPAN	1,470.8	(17.3)	485	3,620.5	240	713.5	316	8,572	391	37
494	•	WILLIAMS HOLDINGS	BRITAIN	1,470.7	168.2	203	1,496.9	427	514.8	384	13,481	322	28
495	•	SOMMER ALLIBERT	FRANCE	1,470.0	55.9	360	1,105.6	472	286.6	457	12,044	347	22
496	•	KIKKOMAN	JAPAN	1,461.3	35.2	416	1,184.8	464	477.0	404	4,361	470	20
497	494	KONE	FINLAND	1,455.5	67.3	332	1,611.6	408	392.0	426	17,471	272	45
498	445	ARLA [1]	SWEDEN	1,452.2	0.1	482	618.8	493	121.2	489	6,176	433	20
499	468	DU PONT DE NEMOURS [28]	W. GERMANY	1,446.2[6]	59.5[6]	346	813.5[6]	482	365.7[6]	434	4,196[6]	474	28
500	466	BROTHER INDUSTRIES [29]	JAPAN	1,439.4	41.9	398	1,851.6	388	873.2	279	8,213	396	36
		TOTALS		2,929,238.4	116,473.5		3,069,856.9		992,112.3		18,906,329		

The definitions and concepts underlying the figures in this directory are explained on page 314. › Industry code definitions appear on page 314. Footnotes appear on page 314.

CHANGE IN SALES

10 BIGGEST INCREASES

	SALES RANK	
ARBED	158	296.2%
MO OCH DOMSJO	258	177.7
BOND CORP. HOLDINGS	291	143.6
REDLAND	267	110.8
WILLIAMS HOLDINGS	494	93.9
HÜLS	172	86.5
NOVA	257	82.5
INCO	249	82.3
BHARAT PETROLEUM	286	79.0
SIEBE	423	78.6

10 BIGGEST DECREASES

	SALES RANK	
TÜRKIYE PETROLLERI	198	29.5%
MCDERMOTT INTERNATIONAL	333	28.5
SAINT-GOBAIN	64	24.7
FELDMÜHLE NOBEL	180	17.6
CHARBONNAGES DE FRANCE	463	15.7
VALE DO RIO DOCE	387	15.5
SHOWA SHELL SEKIYU	92	13.8
NORTHERN FOODS	432	13.7
HITACHI ZOSEN	363	10.9
MOBIL OIL (W. GERMANY)	310	10.6

INDUSTRY MEDIANS

INCREASES	
RUBBER PRODUCTS	37.3%
BUILDING MATERIALS	26.0
PUBLISHING, PRINTING	25.0
MINING, CRUDE-OIL PRODUCTION	24.4
ELECTRONICS	24.1
BEVERAGES	23.5
METALS	23.0
METAL PRODUCTS	23.0
COMPUTERS (INCLUDES OFFICE EQUIP.)	22.9
SOAPS, COSMETICS	22.8
MOTOR VEHICLES AND PARTS	22.6
FOREST PRODUCTS	22.2
TEXTILES	20.1
AEROSPACE	19.2
FOOD	18.9
CHEMICALS	17.4
PHARMACEUTICALS	17.4
INDUSTRIAL AND FARM EQUIPMENT	16.3
SCIENTIFIC AND PHOTOGRAPHIC EQUIP.	13.1
TOBACCO	11.0
TRANSPORTATION EQUIPMENT	10.5
PETROLEUM REFINING	7.3

CHANGE IN PROFITS†

10 BIGGEST INCREASES

	SALES RANK	
PEMEX	46	22,370.1%
GENERAL MOTORS OF CANADA	36	7,521.3
ZAMBIA INDUSTRIAL & MINING	345	1,166.9
EBARA	421	1,123.3
KYMMENE	319	1,013.7
EUROC	477	746.1
RAUMA-REPOLA	340	741.5
DILLINGER HÜTTENWERKE	485	650.4
PT ASTRA INTERNATIONAL	446	647.5
METSÄ-SERLA	420	622.6

10 BIGGEST DECREASES

	SALES RANK	
FRIED. KRUPP	86	1,243.5%
RUHRKOHLE	54	820.2
AÉROSPATIALE	126	146.8
EMPRESA COLOMBIANA	427	145.3
PACIFIC DUNLOP	309	143.1
AMOCO CANADA PETROLEUM	448	138.6
TEXACO (BRITAIN)	264	99.5
ARLA	498	96.5
NISSAN DIESEL MOTOR	401	94.3
VALMET	375	93.6

INDUSTRY MEDIANS

INCREASES	
MINING, CRUDE-OIL PRODUCTION	148.3%
FOREST PRODUCTS	61.4
TOBACCO	58.0
METALS	52.7
BUILDING MATERIALS	51.6
ELECTRONICS	50.1
INDUSTRIAL AND FARM EQUIPMENT	49.2
MOTOR VEHICLES AND PARTS	44.7
METAL PRODUCTS	44.4
PHARMACEUTICALS	42.0
BEVERAGES	40.5
CHEMICALS	38.0
AEROSPACE	33.4
FOOD	25.4
PETROLEUM REFINING	24.4
COMPUTERS (INCLUDES OFFICE EQUIP.)	21.0
RUBBER PRODUCTS	20.7
SOAPS, COSMETICS	20.5
PUBLISHING, PRINTING	19.4
SCIENTIFIC AND PHOTOGRAPHIC EQUIP.	19.4
TEXTILES	14.2

†Listings exclude companies that lost money in 1987.

THE MONEY LOSERS

	SALES RANK	LOSS $ Millions
SIDERBRÁS	156	$7,192.8*
BRITISH COAL	98	919.7*
CHARBONNAGES DE FRANCE	463	374.5*
MCDERMOTT INTERNATIONAL	333	261.8*
KOOR INDUSTRIES	304	232.8*
FRIED. KRUPP	86	153.4
RUHRKOHLE	54	75.5
SAARBERGWERKE	275	48.2*
EMPRESA COLOMBIANA	427	46.6
AMOCO CANADA PETROLEUM	448	42.4
KHD	313	41.9*
PACIFIC DUNLOP	309	29.3
KANEBO	188	19.0*
MITSUI ENGINEER. & SHIPBLDG.	493	17.3*
AÉROSPATIALE	126	10.6
SNECMA	282	4.5*

*Also lost money in 1987.

ARRIVALS AND DEPARTURES

NEWCOMERS

	1988 SALES RANK
ASEA BROWN BOVERI	29
BBA GROUP	422
BOND CORP. HOLDINGS	291
CIMENTS FRANÇAIS	441
COBERCO	438
COSMO OIL	91
DOW CHEMICAL CANADA	451
FERRUZZI FINANZIARIA	28
FUJIKURA	479
GOLD STAR	206
GOODMAN FIELDER WATTIE	468
HONAM OIL REFINERY	284
KIKKOMAN	496
LUCKY	445
NINTENDO	474
PT ASTRA INTERNATIONAL	446
SANKYO ALUMINUM INDUSTRY	490
SIEBE	423
SOMMER ALLIBERT	495
TANABE SEIYAKU	471
UNITED PAPER MILLS	483
VOEST-ALPINE STAHL	239
WILLIAMS HOLDINGS	494

RETURNEES*

ALCOA OF AUSTRALIA (1984: 447)	492
AMOCO CANADA PETROLEUM (1985: 348)	448
BOWATER INDUSTRIES (1985: 71)	320
BPB INDUSTRIES (1983: 472)	491
CARNAUD (1982: 424)	464
CHINA STEEL (1986: 472)	476
DILLINGER HÜTTENWERKE (1985: 272)	485
ELKEM (1985: 459)	489
ENGLISH CHINA CLAYS (1986: 498)	443
EUROC (1980: 381)	477
FALCONBRIDGE (1976: 436)	434
GLYNWED INTERNATIONAL (1980: 423)	488
METAL. HOBOKEN-OVERPELT (1986: 229)	453
MO OCH DOMSJO (1986: 464)	258
OUTOKUMPU (1986: 382)	341
SCHINDLER HOLDING (1986: 393)	484

DEPARTURES

	1987 SALES RANK
ACI INTERNATIONAL[1]	416
AHLSTROM (A.)	471
AMATIL	500
ARABIAN OIL	414
ASEA[2]	68
BARILLA	493
BRITOIL[1]	344
BROWN BOVERI[2]	88
COPERSUCAR	427
DEGUSSA[3]	103
DMC (DOLLFUS MIEG)	490
ENSITE[4]	473
GENERAL ELECTRIC CANADA	489
GENERAL MOTORS CONTINENTAL	478
GEORG FISCHER	474
IBM NEDERLAND[3]	438
IMETAL[3]	405
INTERNATIONAL THOMSON ORGANISATION[3]	185
KOREA EXPLOSIVES[4]	181
LUCKY-GOLDSTAR[5]	32
MOBIL OIL FRANCAISE	487
MOBIL OIL ITALIANA	459
MONTEDISON[1]	48
NICHIREI[3]	319
NORTHERN ENGINEERING INDUSTRIES	475
POHANG IRON & STEEL[4]	186
POLYSAR[1]	316
PORSCHE	369
PROUVOST	453
ROVER GROUP[1]	140
ROWNTREE[1]	287
SAINT LOUIS	357
SHOWA SANGYO	499
SUMITOMO METAL MINING[3]	309
SWEDISH MATCH[1]	276
TARMAC[3]	183
VAAL REEFS	491
VICKERS	483

* Figures in parentheses indicate year and sales rank the last time the company was listed.

[1] Acquired by another FORTUNE International 500 company.

[2] ASEA and Brown Boveri merged the majority of their operations into a new company, Asea Brown Boveri.

[3] No longer classified as an industrial.

[4] Financial data not available.

[5] Unconsolidated into Lucky, Honam Oil Refinery, and Gold Star.

THE 500 BY COUNTRY

	1-100	101-200	201-300	301-400	401-500	Total	Largest Company	$ Millions	Rank
ARGENTINA	0	1	0	0	0	1	YPF (YACIMIENTOS PETROLÍFEROS)	6,435.0	125
AUSTRALIA	1	3	1	5	3	13	ELDERS IXL	7,618.2	97
AUSTRIA	0	0	2	0	0	2	ÖMV	3,565.2	228
BELGIUM	1	2	0	0	1	4	PETROFINA	9,898.5	63
BRAZIL	1	1	0	2	1	5	PETROBRÁS (PETRÓLEO BRASILEIRO)	14,806.4	39
BRITAIN	11	14	20	17	12	74	BRITISH PETROLEUM	46,174.0	3
BRITAIN/NETHERLANDS	2	0	0	0	0	2	ROYAL DUTCH/SHELL GROUP	78,381.1	1
CANADA	4	4	7	7	6	28	GENERAL MOTORS OF CANADA	15,657.2	36
CHILE	0	0	1	0	0	1	CODELCO-CHILE	3,153.0	262
COLOMBIA	0	0	0	0	1	1	EMPRESA COLOMBIANA DE PETRÓLEOS	1,783.0	427
DENMARK	0	0	0	0	2	2	MD FOODS	1,690.9	437
FINLAND	0	2	0	6	3	11	NESTE	6,352.9	129
FRANCE	11	9	7	4	8	39	RENAULT	27,109.7	16
INDIA	1	0	3	2	1	7	INDIAN OIL	9,853.7	65
INDONESIA	0	0	0	0	1	1	PT ASTRA INTERNATIONAL	1,642.6	446
IRELAND	0	0	0	0	1	1	JEFFERSON SMURFIT GROUP	1,742.2	431
ISRAEL	0	0	0	1	0	1	KOOR INDUSTRIES	2,638.7	304
ITALY	4	1	0	1	0	6	IRI	45,521.5	4
ITALY/SWITZERLAND	0	1	0	0	0	1	PIRELLI	7,006.4	108
JAPAN	31	31	34	31	32	159	TOYOTA MOTOR	50,789.9	2
KUWAIT	1	0	0	0	0	1	KUWAIT PETROLEUM	12,078.0	50
LUXEMBOURG	0	1	0	0	0	1	ARBED	5,112.0	158
MALAYSIA	0	0	1	0	0	1	PETRONAS	3,633.0	223
MEXICO	1	0	0	0	1	2	PEMEX (PETRÓLEOS MEXICANOS)	13,060.0	46
NETHERLANDS	2	1	2	3	1	9	PHILIPS	28,370.5	13
NETHERLANDS ANTILLES	0	1	0	0	0	1	SCHLUMBERGER	4,924.5	163
NEW ZEALAND	0	1	0	0	0	1	FLETCHER CHALLENGE	5,135.1	155
NORWAY	1	1	0	0	1	3	NORSK HYDRO	9,202.0	75
PANAMA	0	0	0	1	0	1	MCDERMOTT INTERNATIONAL	2,351.7	333
SAUDI ARABIA	0	0	0	1	0	1	SABIC	2,369.9	331
SOUTH AFRICA	1	1	0	1	3	6	BARLOW RAND	9,314.6	71
SOUTH KOREA	3	3	3	1	1	11	SAMSUNG	27,386.1	15
SPAIN	2	0	3	1	2	8	INI	14,985.5	38
SWEDEN	2	3	7	5	3	20	VOLVO	15,752.1	34
SWITZERLAND	3	4	3	0	3	13	NESTLÉ	27,803.0	14
TAIWAN	0	1	0	0	3	4	CHINESE PETROLEUM	6,706.4	118
TURKEY	0	3	0	0	0	3	KOÇ HOLDING	5,568.6	143
VENEZUELA	1	0	0	0	0	1	PETRÓLEOS DE VENEZUELA	9,507.8	68
WEST GERMANY	16	11	6	10	10	53	DAIMLER-BENZ	41,817.9	5
ZAMBIA	0	0	0	1	0	1	ZAMBIA INDUSTRIAL & MINING	2,285.9	345

NOTES TO THE INTERNATIONAL 500

SALES

All companies on the list must have derived more than 50% of their sales from manufacturing and/or mining. Sales do not include excise taxes or customs duties levied according to either volume or value sales, and so the figures for some companies—most of which sell gasoline, liquor, or tobacco—may be lower than those published by the companies themselves. Unless otherwise noted, figures exclude intracompany transactions and include consolidated subsidiaries more than 50% owned, either fully or on a prorated basis. Figures have been converted to dollars using an exchange rate that consists of the official average rate during each company's fiscal year (ended December 31, 1988, unless otherwise noted).

PROFITS

Profits are shown after taxes, minority interests, and extraordinary items. Figures have been converted to dollars using an exchange rate that consists of the official average rate during each company's fiscal year (ended December 31, 1988, unless otherwise noted).

ASSETS

Totals shown at each company's year-end. Figures have been converted to dollars at the official exchange rate at each company's year-end.

STOCKHOLDERS' EQUITY

Stockholders' equity is shown at each company's year-end. Minority interest is not included. Figures have been converted to dollars at the official exchange rate at each company's year-end.

EMPLOYEES

The figure shown is either a year-end or yearly average number as published.

INDUSTRY CODE

Industry code numbers used in the directory indicate which industry represents the greatest volume of industrial sales for each company. The numbers refer to the industry groups below, which are based on categories established by the U.S. Office of Management and Budget and issued by the Federal Statistical Policy and Standards Office. They are the same industry groups as those shown in the tables beginning on page 310. The median figures in the tables refer only to results of companies in the 500. No attempt has been made to calculate medians in groups with fewer than four companies.

10	**Mining, crude-oil production**
20	**Food**
21	**Tobacco**
22	**Textiles**
23	**Apparel**
25	**Furniture**
26	**Forest products**
27	**Publishing, printing**
28	**Chemicals**
29	**Petroleum refining**
30	**Rubber products**
31	**Leather**
32	**Building materials**
33	**Metals**
34	**Metal products**
36	**Electronics**
37	**Transportation equipment**
38	**Scientific and photographic equipment**
40	**Motor vehicles and parts**
41	**Aerospace**
42	**Pharmaceuticals**
43	**Soaps, cosmetics**
44	**Computers**
45	**Industrial and farm equipment**
46	**Jewelry, silverware**
47	**Toys, sporting goods**
49	**Beverages**

The figures in this FORTUNE International 500 Directory were prepared by Susan E. Kuhn and David J. Morrow.

FOOTNOTES TO THE 500

- ● Indicates that a corporation was not among the 500 in 1987.
- N.A. Not Available
- [1] Figures are for fiscal year ended June 30, 1988.
- [2] Government owned.
- [3] Figures are for fiscal year ended March 31, 1988.
- [4] Figures are for fiscal year ended September 30, 1988.
- [5] Figures include some significant subsidiaries owned 50% or less, either fully or on a prorated basis.
- [6] Figures are unconsolidated.
- [7] Figure is a FORTUNE estimate.
- [8] Figures are for fiscal year ended October 31, 1988.
- [9] Figures are for fiscal year ended November 30, 1988.
- [10] Name was changed from Nippon Kokan KK, June 8, 1988.
- [11] Figures are for fiscal year ended January 31, 1988.
- [12] Name was changed from Mitsubishi Chemical Industries, June 1, 1988.
- [13] Figures are for fiscal year ended May 31, 1988.
- [14] Figures are for fiscal year ended February 29, 1988.
- [15] Figures are for fiscal year ended October 20, 1988.
- [16] Figures are for fiscal year ended April 30, 1988.
- [17] Name was changed from Pilkington Brothers in July 1987.
- [18] Formerly consolidated into Lucky-Goldstar.
- [19] Name was changed from CDF Chimie, September 1988.
- [20] Name was changed from Nippon Gakki, October 1, 1987.
- [21] Figures are for fiscal year ended July 31, 1988.
- [22] Figures are for fiscal year ended April 20, 1988.
- [23] Figures are for fiscal year ended August 31, 1988.
- [24] Name was changed from Pioneer Concrete Services, December 19, 1988.
- [25] Figures are for fiscal year ended March 20, 1988.
- [26] Name was changed from Mejeriselskabet Danmark, October 3, 1988.
- [27] Figures are for fiscal year ended April 25, 1988.
- [28] Figures are for fiscal year ended December 15, 1988.
- [29] Figures are for fiscal year ended November 20, 1988.

THE 50 INTERNATIONAL

INDEX

COMPANY	SALES RANK
A	
ABITIBI-PRICE	299
ADAM OPEL	61
AECI	425
AÉROSPATIALE	126
AGA	462
AICHI MACHINE INDUSTRY	455
AISIN SEIKI	213
AJINOMOTO	234
AKZO	85
ALCAN ALUMINIUM	88
ALCOA OF AUSTRALIA	492
ALFA-LAVAL	379
ALLIED-LYONS	134
ALPS ELECTRIC	301
ALUSUISSE	197
AMCOR	365
AMOCO CANADA PETROLEUM	448
ARBED	158
ARLA	498
ASAHI BREWERIES	279
ASAHI CHEMICAL INDUSTRY	115
ASAHI GLASS	94
ASCOM HOLDING	452
ASEA BROWN BOVERI	29
ASSOCIATED BRITISH FOODS	205
ATLAS COPCO	369
AVIONS DASSAULT-BREGUET	260
AXEL SPRINGER VERLAG	454
B	
BARLOW RAND	71
BASF	19
BASS	146
BAT INDUSTRIES	42
BAYER	22
BBA GROUP	422
BEECHAM GROUP	187
BERTELSMANN	121
BESNIER	449
BHARAT HEAVY ELECTRICALS	450
BHARAT PETROLEUM	286
BICC	152
BLUE CIRCLE INDUSTRIES	382
BMW	53
BOC GROUP	214
BOEHRINGER INGELHEIM	332
BOND CORP. HOLDINGS	291
BORAL	378
BOSCH (ROBERT)	35
BOWATER INDUSTRIES	320
BPB INDUSTRIES	491
BRIDGESTONE	72
BRITISH AEROSPACE	60
BRITISH COAL	98
BRITISH PETROLEUM	3
BRITISH STEEL	107
BROKEN HILL PROPRIETARY	104
BROTHER INDUSTRIES	500
BSN	103
BTR	66
BULL	151
BURMAH OIL	322
C	
CADBURY SCHWEPPES	185
CANADA PACKERS	321
CANADIAN PACIFIC	67
CANON	82
CARLSBERG	486
CARL-ZEISS-STIFTUNG	403
CARNAUD	464
CASIO COMPUTER	426
CEA-INDUSTRIE	165
CEPSA	263
CGE (CIE D'ÉLECTRICITÉ)	24
CHARBONNAGES DE FRANCE	463
CHINA STEEL	476
CHINESE PETROLEUM	118
CHRYSLER CANADA	106
CIBA-GEIGY	51
CIMENTS FRANÇAIS	441
CITIZEN WATCH	392
COAL INDIA	335
COATS VIYELLA	247
COBERCO	438
COCKERILL SAMBRE	170
CODELCO-CHILE	262
CONOCO (BRITAIN)	487
CONSOLIDATED-BATHURST	394
CONSOLIDATED GOLD FIELDS	428
CONTINENTAL	179
COOKSON GROUP	372
COSMO OIL	91
COURTAULDS	193
CRA	192
CSR	399
D	
DAEWOO	30
DAF	305
DAIDO STEEL	292
DAIHATSU MOTOR	173
DAIKIN INDUSTRIES	418
DAIMLER-BENZ	5
DAINIPPON INK & CHEMICALS	181
DAI NIPPON PRINTING	119
DAISHOWA PAPER MFG.	349
DALGETY	90
DE BEERS CONSOL. MINES	191
DENKI KAGAKU KOGYO	430
DEUTSCHE BABCOCK	277
DEUTSCHE TEXACO	245
DIESEL KIKI	439
DILLINGER HÜTTENWERKE	485
DOFASCO	324
DOMTAR	356
DOOSAN	386
DOUWE EGBERTS	389
DOW CHEMICAL CANADA	451
DSM	157
DU PONT (WEST GERMANY)	499
E	
EBARA	421
ELDERS IXL	97
ELECTROLUX	52
ELF AQUITAINE	25
ELKEM	489
EMPRESA COL. DE PETRÓLEOS	427
ENGLISH CHINA CLAYS	443
ENI	18
ENSO-GUTZEIT	336
ENT. MINIÈRE & CHIMIQUE	297
ERICSSON (L.M.)	159
ESSELTE	334
ESSO (FRANCE)	312
ESSO (W. GERMANY)	169
ESSO ITALIANA	327
ESSO UK	139
EUROC	477
EZAKI GLICO	472
F	
FAG KUGEL. G. SCHÄFER	385
FALCONBRIDGE	434
FELDMÜHLE NOBEL	180
FERRUZZI FINANZIARIA	28
FIAT	8
FLETCHER CHALLENGE	155
FORD ESPAÑA	295
FORD MOTOR (BRITAIN)	58
FORD MOTOR OF AUSTRALIA	406
FORD MOTOR OF CANADA	47
FORD-WERKE (W. GERMANY)	57
FREEGOLD	466
FREUDENBERG	380
FUJI ELECTRIC	199
FUJI HEAVY INDUSTRIES	164
FUJIKURA	479
FUJI PHOTO FILM	136
FUJITSU	40
FURUKAWA ELECTRIC	176
G	
GALLAHER	253
GEC (GENERAL ELECTRIC CO.)	69
GENERAL MOTORS DO BRASIL	424
GENERAL MOTORS ESPAÑA	272
GENERAL MOTORS OF CANADA	36
GENERAL SEKIYU	269
GKN	230
GLAXO HOLDINGS	225
GLYNWED INTERNATIONAL	488
GOLD STAR	206
GOODMAN FIELDER WATTIE	468
GRAND METROPOLITAN	76
GRUNDIG	412
GRUPO INDUSTRIAL ALFA	419
GUINNESS	238
H	
HACHETTE	195
HANSON	62
HAWKER SIDDELEY GROUP	246
HEINEKEN	266
HENKEL	138
HERAEUS HOLDING	326
HEWLETT-PACKARD (W. GER.)	447
HILLSDOWN HOLDINGS	130
HINDUSTAN PETROLEUM	308
HINO MOTORS	252
HITACHI	6
HITACHI ZOSEN	363
HOECHST	20
HOESCH	171
HOLDERBANK	293
HONAM OIL REFINERY	284
HONDA MOTOR	23
HONSHU PAPER	276
HOOGOVENS GROEP	202
HÜLS	172
HYOSUNG	190
HYUNDAI HEAVY INDUSTRIES	227
HYUNDAI MOTOR	174
I	
IBM CANADA	274
IBM DEUTSCHLAND	122
IBM ESPAÑA	459
IBM FRANCE	127
IBM JAPAN	73
IBM U.K. HOLDINGS	113
IDEMITSU KOSAN	78
IMI	456
IMPERIAL CHEMICAL IND.	26
IMPERIAL OIL	160
INCO	249
INDIAN OIL	65
INDÚSTRIAS VOTORANTIM	377
INI	38
IRI	4
ISCOR	342
ISHIKAWAJIMA-HARIMA IND.	131
ISUZU MOTORS	74
ITOHAM FOODS	307
IVACO	417
J	
JACOBS SUCHARD	183
JAGUAR	396
JAPAN TOBACCO	101
JEFFERSON SMURFIT GROUP	431
JOHNSON MATTHEY	364
JUJO PAPER	244
K	
KANEBO	188
KANEGAFUCHI CHEM. INDUSTRY	470
KANTO AUTO WORKS	338
KAO	217
KAWASAKI HEAVY INDUSTRIES	168
KAWASAKI STEEL	100
KEMIRA	353
KF INDUSTRI	323
KHD	313
KIKKOMAN	496
KIRIN BREWERY	145
KLÖCKNER-WERKE	325
KOBE STEEL	96
KOÇ HOLDING	143
KOKUYO	436
KOMATSU	161
KONE	497
KONICA	259
KOOR INDUSTRIES	304
KRUPP (FRIED.)	86
KUBOTA	166
KURARAY	374
KUWAIT PETROLEUM	50
KYMMENE	319
KYOCERA	359
KYOWA HAKKO KOGYO	384
L	
LABATT (JOHN)	229
LAFARGE COPPÉE	211
L'AIR LIQUIDE	184
LIEBHERR INTERNATIONAL	429
LINDE	376
LION	343
L'ORÉAL	194
LUCAS INDUSTRIES	254

THE 50 INTERNATIONAL

EX

COMPANY	SALES RANK
LUCKY	445
LVMH	306
M	
MAN	81
MANNESMANN	55
MATRA	251
MATSUSHITA ELEC. INDUSTRIAL	9
MATSUSHITA ELECTRIC WORKS	133
MAXWELL COMMUNICATION	381
MAZDA MOTOR	37
MCDERMOTT INTERNATIONAL	333
MD FOODS	437
MEIJI MILK PRODUCTS	288
MEIJI SEIKA	370
MERCK (E.)	408
METAL BOX	366
METALLGESELLSCHAFT	79
METAL HOBOKEN-OVERPELT	453
METSÄ-SERLA	420
MICHELIN	80
MINOLTA CAMERA	367
MITSUBISHI ELECTRIC	32
MITSUBISHI GAS CHEMICAL	407
MITSUBISHI HEAVY INDUSTRIES	44
MITSUBISHI KASEI	102
MITSUBISHI METAL	141
MITSUBISHI MINING & CEMENT	358
MITSUBISHI MOTORS	41
MITSUBISHI OIL	215
MITSUBISHI PETROCHEMICAL	268
MITSUBISHI RAYON	373
MITSUI ENGIN. & SHIPBLDG.	493
MITSUI MINING	400
MITSUI MINING & SMELTING	346
MITSUI PETROCHEMICAL IND.	397
MITSUI TOATSU CHEMICALS	261
MO OCH DOMSJO	258
MOBIL OIL (W. GERMANY)	310
MOLSON	475
MOORE	315
MORINAGA MILK INDUSTRY	330
MURATA MANUFACTURING	481
N	
NAN YA PLASTICS	411
NEC	27
NESTE	129
NESTLÉ	14
NEWS CORP.	182
NGK INSULATORS	465
NICHIRO GYOGYO	357
NIHON CEMENT	404
NINTENDO	474
NIPPONDENSO	77
NIPPON LIGHT METAL	250
NIPPON MEAT PACKERS	212
NIPPON MINING	149
NIPPON OIL	48
NIPPON SEIKO	361
NIPPON SHEET GLASS	461
NIPPON SUISAN KAISHA	209
NIPPON STEEL	31
NISSAN DIESEL MOTOR	401
NISSAN MOTOR	12
NISSAN SHATAI	285
NISSHINBO INDUSTRIES	467
NISSHIN FLOUR MILLING	318
NISSHIN STEEL	296
NIXDORF COMPUTER	271
NKK	87
NOBEL INDUSTRIES	235
NOKIA	153
NORANDA	105
NORSK HYDRO	75
NORTHERN FOODS	432
NORTHERN TELECOM	147
NOVA	257
NTN TOYO BEARING	413
O	
OERLIKON-BÜHRLE	298
OIL & NAT. GAS COMMISSION	201
OJI PAPER	200
OKI ELECTRIC INDUSTRY	248
OLIVETTI	123
OMRON TATEISI ELECTRONICS	347
ÖMV	228
ONODA CEMENT	303
ORKEM	224
OUTOKUMPU	341
P	
PWA	391
PACIFIC DUNLOP	309
PEARSON	362
PECHINEY	83
PEMEX	46
PERNOD RICARD	388
PETROBRÁS	39
PETRO-CANADA	231
PETROFINA	63
PETRÓLEOS DE VENEZUELA	68
PETRONAS	223
PEUGEOT	21
PHILIPS	13
PILKINGTON	203
PIONEER ELECTRONIC	265
PIONEER INTERNATIONAL	316
PIRELLI	108
PLESSEY	350
PRIMA MEAT PACKERS	433
PROCORDIA	280
PROCTER & GAMBLE (W. GER.)	398
PT ASTRA INTERNATIONAL	446
Q	
Q.P.	442
R	
RACAL ELECTRONICS	337
RANK XEROX	196
RANKS HOVIS MCDOUGALL	278
RAUMA-REPOLA	340
RECKITT & COLMAN	317
REDLAND	267
REED INTERNATIONAL	240
RENAULT	16
RENGO	414
REPSOL	89
RHEINBRAUN	457
RHEINMETALL BERLIN	470
RHÔNE-POULENC	56
RICOH	167
RMC GROUP	221
ROCHE/SAPAC	137
ROLLS-ROYCE	232
ROTHMANS INTERNATIONAL	352
ROYAL DUTCH/SHELL GROUP	1
RTZ	110
RUHRKOHLE	54
S	
SAAB-SCANIA	112
SAARBERGWERKE	275
SABANCI (HACI ÖMER)	186
SABIC	331
SAGEM	458
SAINT-GOBAIN	64
SALZGITTER	140
SAMSUNG	15
SANDOZ	111
SANDVIK	300
SANKYO	283
SANKYO ALUMINUM INDUSTRY	490
SANYO ELECTRIC	70
SANYO-KOKUSAKU PULP	281
SAPPORO BREWERIES	415
SASOL	440
SCHERING	273
SCHINDLER HOLDING	484
SCHLUMBERGER	163
SCHNEIDER	116
SEAGRAM	287
SEITA	482
SEKISUI CHEMICAL	210
SHARP	84
SHIN-ETSU CHEMICAL	360
SHIONOGI	383
SHISEIDO	270
SHOWA DENKO	162
SHOWA SHELL SEKIYU	92
SIDERBRÁS	156
SIEBE	423
SIEMENS	7
SKF	236
SNECMA	282
SNOW BRAND MILK PRODUCTS	124
SOLVAY	114
SOMMER ALLIBERT	495
SONY	59
SOURCE PERRIER	328
SSAB SVENSKT STÅL	344
SSANGYONG	135
STATOIL	120
STC	189
STEEL AUTHORITY OF INDIA	216
STELCO	354
STORA KOPPARBERGS BERG.	142
SULZER BROTHERS	219
SUMITOMO CHEMICAL	109
SUMITOMO ELEC. INDUSTRIES	144
SUMITOMO HEAVY INDUSTRIES	371
SUMITOMO METAL INDUSTRIES	95
SUMITOMO RUBBER	237
SUNKYONG	93
SUZUKI MOTOR	128
SVENSKA CELLULOSA	241
T	
TABACALERA	311
TAIO PAPER MFG.	480
TAIYO FISHERY	99
TAKEDA CHEMICAL	175
TANABE SEIYAKU	471
TATE & LYLE	218
TATUNG	473
TDK	255
TEIJIN	204
TEXACO (BRITAIN)	264
TEXACO CANADA	402
THOMSON	49
THORN EMI	154
THYSSEN	33
TI GROUP	435
T&N	405
TOA NENRYO KOGYO	178
TOPPAN PRINTING	132
TORAY INDUSTRIES	150
TOSHIBA	17
TOSOH	444
TOTAL	43
TOTO	348
TOYOBO	243
TOYODA AUTOMATIC LOOM	302
TOYO SASH	289
TOYO SEIKAN	177
TOYOTA AUTO BODY	368
TOYOTA MOTOR	2
TOYO TIRE & RUBBER	460
TRELLEBORG	233
TÜRKIYE PETROLLERI	198
U	
UBE INDUSTRIES	208
ULTRAMAR	395
UNIGATE	220
UNILEVER	11
UNIÓN EXPLOSIVOS RIO TINTO	469
UNION INTERNATIONAL	355
UNION LAITIÈRE NORMANDE	416
UNITED BISCUITS (HOLDINGS)	207
UNITED PAPER MILLS	483
UNITIKA	329
USINOR-SACILOR	45
V	
VALE DO RIO DOCE	387
VALEO	290
VALMET	375
VARITY	390
VAUXHALL MOTORS	222
VEBA OEL	117
VIAG	148
VOEST-ALPINE STAHL	239
VOLKSWAGEN	10
VOLVO	34
W	
WACKER-CHEMIE	478
WELLCOME	351
WESSANEN	393
WHITBREAD	339
WILLIAMS HOLDINGS	494
Y	
YAMAHA	242
YAMAHA MOTOR	226
YAMAZAKI BAKING	256
YOKOHAMA RUBBER	314
YOSHIDA KOGYO	409
YPF	125
Z	
ZAHNRADFABRIK FRIEDRICH.	294
ZAMBIA INDUSTRIAL & MINING	345

THE 1 BIGGEST BANKS OUTSIDE

JAPAN'S LEAD GETS LONGER

Powered by steady growth in assets, Japanese banks are increasing their world dominance. Ten of the 11 largest banks outside the U.S. are Japanese, a greater concentration at the top than last year. Of the 35 banks with $100 billion or more in assets, over half are Japanese. Such strength is partly a result of currency translations. The dollar weakened against the yen last year, so asset increases appear greater in dollar terms than in yen. But dollars are what much of the world cares about—and any way you cut it, the Japanese banks at the top are a virtual dynasty. Dai-Ichi Kangyo, Sumitomo, Fuji, Mitsubishi, and Sanwa have shared the top five rankings since 1984. When FORTUNE published its first banking list 20 years ago, only two of the top ten outside the U.S. were Japanese, and London was still the center of world banking, aside from New York, with Barclays and National Westminster at the top.

While the Japanese marched forward, their European counterparts slugged it out in a tumultuous year. Some established heavyweights slipped several notches from last year's rankings. Deutsche Bank fell ten places, to No. 21, and Crédit Agricole, the largest non-Japanese bank on this year's list, declined three spots, to tenth.

The two banks making their first appearances in the top 100 are European. Banco Bilbao Vizcaya (No. 65) is the product of a merger between two Spanish banks, Banco de Bilbao and Banco de Vizcaya. Südwestdeutsche Landesbank (No. 90) is a union of two German banks, Landesbank Stuttgart and Badische Kommunale Landesbank. All four banks departing the list are also European: Banco Hispano Americano, Bank für Gemeinwirtschaft, Banco Central, and the Royal Bank of Scotland. Anticipation of 1992 has caused unprecedented capital movement. European banks are bracing themselves for new challenges from outside their borders.

Those who think the future lies along the Pacific Rim will find further support in this year's list. Two banks from the region are back. Helped by appreciation of the local currency against the dollar, assets of the Bank of Seoul and Australia's Commonwealth Bank Group jumped sharply. After a three-year absence, the Bank of Seoul leaped to the 88th position because its assets increased by 50%. Commonwealth Bank rejoins the list at No. 92 after spending a year down under.

Third World debt caught up with many Canadian and British banks in 1987. They set aside vast reserves to account for the likelihood that those loans will never be repaid in full. The reserves clobbered 1987 earnings, so profits for 1988 shone by comparison. Toronto-Dominion Bank (No. 77) posted the largest gain, 1,247%. The listed Canadian banks, including the Royal Bank of Canada (No. 42) and the Canadian Imperial Bank of Commerce (No. 51), had combined profits of $2.4 billion, vs. a loss totaling $698 million the year before. In Britain, earnings at Barclays (No. 13) were up 421%, while National Westminster (No. 18) had a 131% increase.

British banks also scored well in return on stockholders' equity, a key figure for any business. Britain claims two of the top three: Standard Chartered Bank (No. 85) and Lloyds Bank (No. 36). The leader by this measure was Banco do Brasil (No. 49), but return ratios must be regarded skeptically in a country with triple-digit inflation. The top ten in ROE also included two Swedish banks and two of the ever-present Japanese.

– Jacob Park and Joan C. Viebranz

RANK BY ASSETS 1988	1987	COMPANY
1	1	DAI-ICHI KANGYO BANK[7]
2	2	SUMITOMO BANK[7]
3	3	FUJI BANK[7]
4	4	MITSUBISHI BANK[7]
5	5	SANWA BANK[7]
6	6	INDUSTRIAL BANK OF JAPAN[7]
7	8	NORINCHUKIN BANK[7,9]
8	12	TOKAI BANK[7]
9	16	MITSUI BANK[7]
10	7	CRÉDIT AGRICOLE[10]
11	10	MITSUBISHI TRUST & BANKING[7,9]
12	9	BANQUE NATIONALE DE PARIS[10]
13	14	BARCLAYS BANK
14	21	BANK OF TOKYO[7]
15	19	LONG-TERM CREDIT BANK OF JAPAN[7]
16	17	SUMITOMO TRUST & BANKING[7,9]
17	13	CRÉDIT LYONNAIS[10]
18	15	NATIONAL WESTMINSTER BANK
19	22	TAIYO KOBE BANK[7,9]
20	20	MITSUI TRUST & BANKING[7]
21	11	DEUTSCHE BANK[11]
22	23	YASUDA TRUST & BANKING[7,9]
23	18	SOCIÉTÉ GÉNÉRALE
24	25	DAIWA BANK[7,9]
25	28	BANK OF CHINA[10]
26	24	DRESDNER BANK[11]
27	27	CIE FINANCIÈRE DE PARIBAS
28	30	TOYO TRUST & BANKING[7,9]
29	35	NIPPON CREDIT BANK[7,9]
30	31	HONGKONG & SHANGHAI BANKING
31	26	UNION BANK OF SWITZERLAND[9]
32	38	KYOWA BANK[7]
33	29	SWISS BANK CORP.[9]
34	32	COMMERZBANK[11]
35	37	MIDLAND BANK
36	40	LLOYDS BANK
37	49	SHOKO CHUKIN BANK[7,10]
38	47	SAITAMA BANK[7,9]
39	33	WESTDEUTSCHE LANDESBANK[10,11]
40	36	BAYERISCHE VEREINSBANK[11]
41	34	BANCA NAZIONALE DEL LAVORO[10]
42	48	ROYAL BANK OF CANADA[12]
43	56	ZENSHINREN BANK[7]
44	39	ALGEMENE BANK NEDERLAND
45	44	AMSTERDAM-ROTTERDAM BANK
46	51	ISTITUTO BANC. SAN PAOLO DI TORINO[10]
47	53	BANK OF YOKOHAMA[7,9]
48	43	RABOBANK
49	50	BANCO DO BRASIL[10]
50	42	BAYERISCHE LANDESBANK[11]

COUNTRY	ASSETS[1] $ Millions	Percent change in U.S. dollars	Percent change in local currency	DEPOSITS[2] $ Millions	Rank	LOANS[3] $ Millions	NET INCOME[4] $ Millions	STOCKHOLDERS' EQUITY[5] $ Millions	OFFICES[6] Number	EMPLOYEES Number
JAPAN	379,322.8	30.8	11.4	283,185.4	1	212,719.0	1,095.8	8,567.5	374	18,663
JAPAN	363,232.6	33.7	13.9	267,995.2	2	194,615.4	1,023.5	8,342.2	372	16,516
JAPAN	360,529.8	37.0	16.1	258,574.7	3	194,254.3	904.2	8,888.3	325	14,542
JAPAN	348,999.0	41.5	20.5	251,146.9	4	185,062.9	875.4	8,286.0	250	14,296
JAPAN	330,705.4	38.1	17.7	246,625.5	5	193,856.3	898.4	7,641.1	295	14,337
JAPAN	272,918.3	32.9	13.2	216,615.9	6	146,857.2	472.0	6,273.2	33	5,342
JAPAN	235,944.3	26.6	7.9	214,256.7	7	97,744.9	249.0	1,283.9	39	3,163
JAPAN	227,644.3	34.4	13.9	172,072.5	9	122,260.5	480.0	5,140.8	232	12,308
JAPAN	211,358.6	28.7	9.7	152,698.9	17	123,313.2	572.1	4,601.7	234	10,185
FRANCE	210,566.3	(2.0)	11.5	167,103.5	11	190,043.9	566.1	6,025.3	9,746	73,693
JAPAN	208,341.7	27.7	8.8	178,030.5	8	94,690.9	472.0	3,304.6	64	6,050
FRANCE	196,922.3	7.6	22.3	169,887.1	10	179,449.5	514.1	4,545.8	2,533	58,091
BRITAIN	189,250.5	14.3	19.2	157,401.0	13	157,003.1	1,580.0	10,328.3	4,100	118,410
JAPAN	185,428.8	27.6	8.7	129,368.4	22	96,526.1	342.1	3,941.6	319	13,159
JAPAN	184,752.9	27.1	8.2	147,167.6	19	116,072.9	373.6	4,176.2	27	3,336
JAPAN	182,529.1	26.1	7.4	162,201.0	12	80,513.6	455.7	3,290.8	61	6,554
FRANCE	178,848.1	6.0	20.6	153,745.4	15	161,816.8	346.4	5,545.0	2,671	58.151
BRITAIN	178,394.1	8.7	13.3	153,688.1	16	154,214.4	1,672.6	10,755.1	3,767	111,000
JAPAN	175,470.4	26.1	7.5	131,757.8	21	112,057.7	298.6	3,251.4	365	13,218
JAPAN	174,943.5	33.9	14.1	151,352.7	18	80,084.5	369.1	2,661.9	61	6,345
W. GERMANY	172,142.5	0.8	13.8	154,824.6	14	138,983.9	673.1	6,754.2	1,530	54,769
JAPAN	167,847.6	26.0	7.3	126,845.0	23	73,458.3	306.9	2,013.1	80	5,358
FRANCE	155,457.3	1.4	15.3	134,494.6	20	137,381.7	510.7	3,315.8	2,327	45,462
JAPAN	150,733.7	27.6	8.7	76,790.4	39	79,934.9	253.9	2,641.7	202	8,865
CHINA	149,997.5	26.6	26.6	60,068.4	53	51,114.7	1,132.6	6,603.1	920	43,600
W. GERMANY	130,230.6	(1.1)	11.6	121,145.4	24	107,839.3	284.0	4,340.9	1,405	38,012
FRANCE	121,597.4	(0.8)	12.9	94,916.2	28	92,923.4	445.7	3,230.5	N.A.	25,500
JAPAN	120,873.1	23.7	5.3	109,130.6	25	49,374.4	272.3	1,717.4	61	5,142
JAPAN	115,176.8	24.6	6.2	92,108.1	30	71,644.0	222.9	2,403.5	24	2,283
HONG KONG	113,165.7	4.9	5.5	101,886.9	26	58,476.4	550.7	4,601.1	1,300	52,414
SWITZERLAND	110,907.4	(12.1)	3.8	92,516.3	29	93,169.3	531.9	6,724.3	268	20,872
JAPAN	110,613.7	26.7	8.0	83,621.8	36	65,372.9	258.3	2,755.0	238	8,287
SWITZERLAND	102,602.4	(10.8)	5.4	86,544.4	32	87,881.0	461.4	6,063.4	234	17,477
W. GERMANY	101,719.9	(1.2)	11.5	95,557.8	27	85,178.8	277.3	3,324.7	888	27,320
BRITAIN	100,785.9	10.3	15.0	86,777.3	31	72,833.7	733.9	5,496.0	1,980	59,093
BRITAIN	93,741.8	10.7	15.4	82,934.2	37	78,964.5	1,095.5	5,199.4	2,690	83,932
JAPAN	93,210.0	22.3	4.1	84,031.6	35	75,986.7	44.9	2,212.4	98	6,316
JAPAN	93,168.3	24.9	6.4	70,988.5	46	54,047.6	173.7	2,106.5	208	8,054
W. GERMANY	93,037.5	(4.2)	8.2	85,903.0	33	76,727.1	91.5	2,364.5	18	9,696
W. GERMANY	91,669.7	(3.8)	8.7	85,675.7	34	80,142.2	144.8	2,155.4	463	14,785
ITALY	90,968.7	(6.1)	5.9	76,262.2	40	68,570.3	119.8	3,111.6	535	26,766
CANADA	90,230.7	16.2	7.7	72,312.2	44	63,770.9	569.7	4,170.7	1,560	46,096
JAPAN	86,874.6	33.5	13.7	79,358.2	38	41,260.2	190.5	1,236.3	18	980
NETHERLANDS	85,069.9	(0.4)	12.9	76,026.0	41	51,988.0	309.1	3,004.5	960	30,580
NETHERLANDS	83,967.0	3.1	16.8	73,955.0	43	44,563.4	297.0	2,948.1	859	23,198
ITALY	81,648.1	10.2	24.3	61,861.4	51	40,199.4	445.3	3,226.6	719	19,416
JAPAN	81,420.4	30.9	11.5	61,578.2	52	49,733.5	130.8	2,122.9	200	6,727
NETHERLANDS	80,707.3	(2.0)	11.0	74,884.1	42	56,893.6	393.6	4,636.4	3,299	33,200
BRAZIL	80,202.4	5.9	1,022.1	25,125.9	96	61,859.7	2,211.8	5,063.8	4,100	135,425
W. GERMANY	79,961.0	(4.4)	8.0	67,213.2	49	63,777.8	117.8	1,760.9	7	4,474

THE 10 BIGGEST BANKS OUTSIDE

NKS

RANK BY ASSETS 1988	1987	COMPANY	COUNTRY	ASSETS[1] $ Millions	Percent change in U.S. dollars	Percent change in local currency	DEPOSITS[2] $ Millions	Rank	LOANS[3] $ Millions	NET INCOME[4] $ Millions
51	54	CANADIAN IMPERIAL BANK OF COMMERCE[12]	CANADA	77,631.8	15.6	7.1	59,512.0	54	55,166.4	472.7
52	52	CHUO TRUST & BANKING[7,9]	JAPAN	76,848.0	23.7	5.3	69,140.5	48	28,776.6	91.2
53	64	HOKKAIDO TAKUSHOKU BANK[7,9]	JAPAN	76,682.0	23.6	5.3	58,286.0	55	43,086.3	114.4
54	46	BAYERISCHE HYPOTHEKEN & WECHSEL[11]	W. GERMANY	76,218.0	(5.2)	7.0	71,013.4	45	67,897.4	141.8
55	41	CRÉDIT SUISSE[9]	SWITZERLAND	75,488.0	(10.5)	5.7	64,010.7	50	62,471.8	404.4
56	45	DEUTSCHE GENOSSENSCHAFTSBANK[11]	W. GERMANY	74,752.0	(7.8)	4.0	69,745.4	47	58,923.8	86.6
57	70	BANK MELLI IRAN[10,13]	IRAN	72,817.0	36.4	27.0	49,172.6	64	25,637.9	45.1
58	59	CIE FINANCIÈRE DE SUEZ	FRANCE	67,373.8	4.4	18.7	33,586.2	84	49,757.2	448.2
59	72	WESTPAC BANKING[8]	AUSTRALIA	66,225.0	32.8	20.3	31,416.3	90	39,364.5	528.3
60	57	CASSA DI RISPARMIO DELLE PROVINCIE LOMBARDE	ITALY	65,370.9	0.5	13.4	52,070.9	61	29,985.6	512.6
61	60	BANK OF MONTREAL[12]	CANADA	64,695.3	1.1	(6.3)	54,415.2	58	42,621.7	442.6
62	62	CRÉDIT INDUSTRIEL ET COMMERCIAL[10]	FRANCE	63,011.1	.0	13.7	53,542.3	60	56,693.5	169.1
63	55	GÉNÉRALE DE BANQUE	BELGIUM	62,615.0	(5.3)	7.2	57,959.0	56	43,777.7	202.7
64	61	BANCA COMMERCIALE ITALIANA[10]	ITALY	62,595.0	(0.7)	12.0	54,146.3	59	44,315.2	286.6
65	•	BANCO BILBAO VIZCAYA	SPAIN	62,508.8	—	—	40,122.9	71	28,184.2	730.4
66	58	NORDDEUTSCHE LANDESBANK[10,11]	W. GERMANY	61,958.5	(4.6)	7.7	57,171.7	57	54,753.2	38.3
67	63	MONTE DEI PASCHI DI SIENA[9,10]	ITALY	61,823.9	(1.8)	10.7	50,100.0	63	31,652.6	195.2
68	68	BANK OF NOVA SCOTIA[12]	CANADA	61,223.9	12.8	4.5	48,030.4	65	41,661.6	405.2
69	75	AUSTRALIA & NEW ZEALAND BANKING[8]	AUSTRALIA	57,764.2	24.8	13.0	31,577.2	89	29,011.0	471.5
70	65	BANCO DI NAPOLI[10]	ITALY	57,297.9	(4.2)	8.0	47,559.0	66	38,433.3	56.9
71	71	CREDITO ITALIANO[10]	ITALY	56,856.3	10.0	24.0	50,614.4	62	41,298.4	213.5
72	69	GROUPE DES BANQUES POPULAIRES	FRANCE	55,926.1	3.8	18.1	45,399.0	68	50,375.9	229.4
73	66	BANCO DI ROMA[10]	ITALY	54,664.8	(3.8)	8.5	45,867.5	67	39,350.8	44.8
74	85	CHIBA BANK[7,9]	JAPAN	51,529.3	49.8	27.6	39,646.3	72	35,147.5	104.7
75	94	NATIONAL AUSTRALIA BANK[8]	AUSTRALIA	49,856.4	49.7	35.6	30,497.1	92	38,621.9	426.9
76	74	STATE BANK OF INDIA[7,10,14]	INDIA	49,541.0	5.8	—	N.A.		N.A.	N.A.
77	83	TORONTO-DOMINION BANK[12]	CANADA	48,606.5	17.3	8.7	38,041.1	75	35,702.0	534.1
78	86	HOKURIKU BANK[7,9]	JAPAN	48,387.6	24.7	6.3	38,420.4	74	33,861.1	99.9
79	84	SKANDINAVISKA ENSKILDA BANKEN	SWEDEN	47,163.8	17.0	23.7	31,182.4	91	30,539.7	128.0
80	79.	BANK BRUSSELS LAMBERT[5]	BELGIUM	45,768.2	5.0	7.6	40,608.7	69	27,955.6	109.5
81	93	JOYO BANK[7,9]	JAPAN	45,345.1	41.8	20.8	38,039.3	76	26,540.5	112.5
82	73	HESSISCHE LANDESBANK[11]	W. GERMANY	44,358.4	(6.4)	5.7	36,632.6	80	34,059.7	37.3
83	76	NEDERLANDSCHE MIDDENSTANDSBANK	NETHERLANDS	43,253.2	(4.6)	8.0	40,365.6	70	30,148.4	152.3
84	80	CRÉDIT MUTUEL[14]	FRANCE	43,234.3	(0.6)	13.1	31,577.2	88	22,046.2	238.5
85	67	STANDARD CHARTERED BANK	BRITAIN	42,847.3	(23.6)	(20.3)	34,397.3	83	36,814.0	488.2
86	92	SHIZUOKA BANK[7,9]	JAPAN	42,838.7	34.5	14.5	36,884.2	78	27,660.3	115.8
87	77	CRÉDIT COMMUNAL DE BELGIQUE	BELGIUM	41,963.0	(7.4)	4.7	37,404.2	77	26,406.7	41.9
88	•	BANK OF SEOUL	SOUTH KOREA	41,434.9	—	—	11,901.7	99	7,902.4	43.3
89	78	BANQUE FRANÇAISE DU COMMERCE EXTÉRIEUR	FRANCE	41,311.2	(7.8)	4.9	26,172.6	95	38,832.8	12.3
90	•	SUDWESTDEUTSCHE LANDESBANK[10,11]	W. GERMANY	40,994.2	—	—	38,912.2	73	34,057.2	42.1
91	82	ASLK-CGER	BELGIUM	40,292.0	(3.2)	9.5	33,440.7	86	31,894.1	76.8
92	•	COMMONWEALTH BANK GROUP[15]	AUSTRALIA	40,078.8	33.6	21.2	23,106.3	97	22,740.2	265.8
93	89	TRUSTEES SAVINGS BANK GROUP[12]	BRITAIN	39,831.2	17.3	14.1	33,527.1	85	20,585.5	489.0
94	98	PKBANKEN[10]	SWEDEN	39,756.2	27.0	34.3	29,164.4	93	25,501.5	94.4
95	97	ASHIKAGA BANK[7,9]	JAPAN	39,706.1	32.6	13.0	34,673.0	82	28,689.7	103.4
96	81	CREDITANSTALT-BANKVEREIN[10,11]	AUSTRIA	39,265.7	(7.1)	4.8	36,867.0	79	22,433.4	33.9
97	96	KREDIETBANK[7]	BELGIUM	39,206.0	22.9	14.1	35,249.4	81	34,593.1	117.3
98	91	SVENSKA HANDELSBANKEN	SWEDEN	38,822.4	11.1	17.5	26,814.4	94	23,427.0	97.6
99	87	CRÉDIT COMMERCIAL DE FRANCE	FRANCE	38,509.1	0.3	14.1	32,720.1	87	33,179.7	94.2
100	95	SWEDBANK	SWEDEN	38,410.4	18.5	25.4	13,006.2	98	29,972.1	8.3
		TOTALS		10,699,767.4			8,403,922.4		6,829,717.6	37,211.6

THE U.S.

	STOCKHOLDERS' EQUITY[5] $ Millions	OFFICES[6] Number	EMPLOYEES Number
	3,777.9	1,528	36,194
	529.6	55	4,222
	1,536.4	225	6,512
	2,218.5	527	13,649
	4,791.6	207	15,055
	1,342.0	23	4,732
	554.9	1,880	21,309
	4,881.6	N.A.	22,423
	4,306.0	1,949	46,506
	3,728.7	534	14,965
	3,102.4	1,226	34,115
	1,508.9	1,250	26,000
	1,605.5	1,175	16,367
	3,172.5	559	21,035
	4,143.2	3,208	32,027
	1,316.4	207	6,190
	3,142.0	773	18,983
	2,601.9	1,248	29,113
	3,055.7	1,735	42,445
	917.5	501	13,439
	2,315.2	521	17,176
	1,770.3	1,855	27,972
	1,305.1	407	14,774
	1,614.6	166	4,891
	3,332.5	1,661	36,950
	N.A.	11,361	284,802
	3,079.6	960	22,853
	1,354.3	187	5,035
	870.2	353	9,440
	900.5	981	16,883
	1,386.1	135	4,956
	853.3	7	2,750
	1,242.3	482	11,781
	2,390.9	4,196	21,549
	2,100.0	741	28,000
	1,692.0	192	5,358
	932.0	1,336	3,590
	804.3	220	9,346
	200.6	30	2,612
	800.7	8	2,102
	1,221.2	1,171	9,057
	2,172.2	1,273	31,954
	3,300.1	1,650	42,243
	520.0	147	4,986
	1,307.4	168	4,183
	1,666.8	364	10,376
	966.9	853	11,042
	490.9	449	6,603
	860.5	409	12,500
	210.6	1	1,289
	318,049.7		2,533,792

RETURN ON STOCKHOLDERS' EQUITY

THE TEN HIGHEST

	RANK	
BANCO DO BRASIL	49	43.7%
STANDARD CHARTERED BANK	85	23.2
LLOYDS BANK	36	21.1
SVENSKA HANDELSBANKEN	98	19.9
NORINCHUKIN BANK	7	19.4
PKBANKEN	94	18.2
BANCO BILBAO VIZCAYA	65	17.6
TORONTO-DOMINION BANK	77	17.3
CHUO TRUST & BANKING	52	17.2
BANK OF CHINA	25	17.2
THE MEDIAN		10.2

CHANGE IN NET INCOME

THE TEN BIGGEST INCREASES*

	RANK	
TORONTO-DOMINION BANK	77	1246.5%
BANCO DI ROMA	73	741.6
BARCLAYS BANK	13	421.0
BANK MELLI IRAN	57	284.0
SUMITOMO BANK	2	208.2
BANCO DO BRASIL	49	191.1
NATIONAL WESTMINSTER BANK	18	130.9
COMMONWEALTH BANK	92	122.2
NATIONAL AUSTRALIA BANK	75	93.3
DAI-ICHI KANGYO BANK	1	85.0

THE FIVE BIGGEST DECREASES*

MONTE DEI PASCHI DI SIENA	67	20.1%
PKBANKEN	94	18.4
BANQUE FRANÇAISE	89	6.8
CRÉDIT LYONNAIS	17	6.3
SVENSKA HANDELSBANKEN	98	5.5

*[illegible]

ASSETS PER EMPLOYEE

THE TEN HIGHEST

	RANK	
ZENSHINREN BANK	43	$88,647,528
NORINCHUKIN BANK	7	74,595,095
LONG-TERM CREDIT BANK	15	55,381,565
INDUSTRIAL BANK OF JAPAN	6	51,089,163
NIPPON CREDIT BANK	29	50,449,749
MITSUBISHI TRUST & BANK	11	34,436,647
YASUDA TRUST & BANKING	22	31,191,747
SWEDBANK	100	29,798,583
SUMITOMO TRUST & BANKING	16	27,850,024
MITSUI TRUST & BANKING	20	27,571,866

THE FIVE LOWEST

COMMONWEALTH BANK	92	1,254,265
LLOYDS BANK	36	1,116,878
TRUSTEES SAVINGS BANK	93	942,906
BANCO DO BRASIL	49	592,228
STATE BANK OF INDIA	76	173,949
THE MEDIAN		$4,441,073

FOOTNOTES TO THE BANKS

● Not on last year's list.
N.A. Not available.

[1] Asset figures have been converted into U.S. dollars using the market rate at each bank's fiscal year-end, which is December 31, 1988, unless otherwise noted. Chuo Trust, Daiwa, Mitsubishi Trust, Mitsui Trust, Sumitomo Trust, Toyo Trust, and Yasuda Trust include holdings of major trusts in their assets.

[2] Deposit figures have been converted into U.S. dollars using the market rate at each bank's fiscal year-end. Figures for West German banks include their own bonds; so do figures for Bank of Tokyo, Industrial Bank of Japan, Long-Term Credit Bank of Japan, and Norinchukin Bank.

[3] Loan figures have been converted into U.S. dollars using the market rate at each bank's fiscal year-end. Figures include loans to banks and money at call or available on short notice.

[4] Net income figures have been converted into U.S. dollars using the average rate in the official exchange market during the bank's fiscal year. Net income is after taxes and excludes minority interest.

[5] Stockholders' equity figures have been converted into U.S. dollars using the market rate at each bank's fiscal year-end. Equity is the sum of capital stock, surplus, and retained earnings.

[6] Includes main office, branches, and agencies.

[7] Fiscal year-end March 31, 1988.

[8] Fiscal year-end September 30, 1988.

[9] Figures are unconsolidated.

[10] Government owned.

[11] Excludes some subsidiaries more than 50% owned.

[12] Fiscal year-end October 31, 1988.

[13] Fiscal year-end March 20, 1988.

[14] FORTUNE estimate.

[15] Fiscal year-end June 30, 1988.

THE 10 BIGGEST BANKS

THE BANKS BY COUNTRY

	1-50	51-100	Total	Largest company	Assets $millions	Rank
AUSTRALIA	0	4	4	WESTPAC BANKING	66,225.0	59
AUSTRIA	0	1	1	CREDITANSTALT-BANKVEREIN	39,265.7	96
BELGIUM	0	5	5	GÉNÉRALE DE BANQUE	62,615.0	63
BRAZIL	1	0	1	BANCO DO BRASIL	80,202.4	49
BRITAIN	4	2	6	BARCLAYS BANK	189,250.5	13
CANADA	1	4	5	ROYAL BANK OF CANADA	90,230.7	42
CHINA	1	0	1	BANK OF CHINA	149,997.5	25
FRANCE	5	6	11	CRÉDIT AGRICOLE	210,566.3	10
HONG KONG	1	0	1	HONGKONG & SHANGHAI BANKING	113,165.7	30
INDIA	0	1	1	STATE BANK OF INDIA	49,541.0	76
IRAN	0	1	1	BANK MELLI IRAN	72,817.0	57
ITALY	2	6	8	BANCA NAZIONALE DEL LAVORO	90,968.7	41
JAPAN	24	7	31	DAI-ICHI KANGYO BANK	379,322.8	1
NETHERLANDS	3	1	4	ALGEMENE BANK NEDERLAND	85,069.9	44
SOUTH KOREA	0	1	1	BANK OF SEOUL	41,434.9	88
SPAIN	0	1	1	BANCO BILBAO VIZCAYA	62,508.8	65
SWEDEN	0	4	4	SKANDINAVISKA ENSKILDA BANKEN	47,163.8	79
SWITZERLAND	2	1	3	UNION BANK OF SWITZERLAND	110,907.4	31
W. GERMANY	6	5	11	DEUTSCHE BANK	172,142.5	21

INDEX TO THE BIGGEST COMMERCIAL BANKING COMPANIES OUTSIDE THE U.S.

COMPANY	RANK
ALGEMENE BANK NEDERLAND	44
AMSTERDAM-ROTTERDAM BANK	45
ASHIKAGA BANK	95
ASLK-CGER	91
AUSTRALIA & NEW ZEALAND BANKING	69
BANCA COMMERCIALE ITALIANA	64
BANCA NAZIONALE DEL LAVORO	41
BANCO BILBAO VIZCAYA	65
BANCO DI NAPOLI	70
BANCO DI ROMA	73
BANCO DO BRASIL	49
BANK BRUSSELS LAMBERT	80
BANK MELLI IRAN	57
BANK OF CHINA	25
BANK OF MONTREAL	61
BANK OF NOVA SCOTIA	68
BANK OF SEOUL	88
BANK OF TOKYO	14
BANK OF YOKOHAMA	47
BANQUE FRANÇAISE DU COMMERCE	89
BANQUE NATIONALE DE PARIS	12
BARCLAYS BANK	13
BAYERISCHE HYPOTHEKEN & WECHSEL	54
BAYERISCHE LANDESBANK	50
BAYERISCHE VEREINSBANK	40
CANADIAN IMPERIAL BANK OF COMMERCE	51
CARIPLO	60
CHIBA BANK	74
CHUO TRUST & BANKING	52
CIE FINANCIÈRE DE SUEZ	58
COMMERZBANK	34
COMMONWEALTH BANK GROUP	92
CRÉDIT AGRICOLE	10
CREDITANSTALT-BANKVEREIN	96
CRÉDIT COMMERCIAL DE FRANCE	99
CRÉDIT COMMUNAL DE BELGIQUE	87
CRÉDIT INDUSTRIEL ET COMMERCIAL	62
CRÉDIT LYONNAIS	17
CRÉDIT MUTUEL	84
CRÉDIT SUISSE	55
CREDITO ITALIANO	71
DAI-ICHI KANGYO BANK	1
DAIWA BANK	24
DEUTSCHE BANK	21
DEUTSCHE GENOSSENSCHAFTSBANK	56
DRESDNER BANK	26
FUJI BANK	3
GÉNÉRALE DE BANQUE	63
GROUPE DES BANQUES POPULAIRES	72
HESSISCHE LANDESBANK	82
HOKKAIDO TAKUSHOKU BANK	53
HOKURIKU BANK	78
HONGKONG & SHANGHAI BANKING	30
INDUSTRIAL BANK OF JAPAN	6
ISTITUTO BANCARIO SAN PAOLO DI TORINO	46
JOYO BANK	81
KREDIETBANK	97
KYOWA BANK	32
LLOYDS BANK	36
LONG-TERM CREDIT BANK OF JAPAN	15
MIDLAND BANK	35
MITSUBISHI BANK	4
MITSUBISHI TRUST & BANKING	11
MITSUI BANK	9
MITSUI TRUST & BANKING	20
MONTE DEI PASCHI DI SIENA	67
NATIONAL AUSTRALIA BANK	75
NATIONAL WESTMINSTER BANK	18
NEDERLANDSCHE MIDDENSTANDSBANK	83
NIPPON CREDIT BANK	29
NORDDEUTSCHE LANDESBANK	66
NORINCHUKIN BANK	7
PARIBAS	27
PKBANKEN	94
RABOBANK	48
ROYAL BANK OF CANADA	42
SAITAMA BANK	38
SANWA BANK	5
SHIZUOKA BANK	86
SHOKO CHUKIN BANK	37
SKANDINAVISKA ENSKILDA BANKEN	79
SOCIÉTÉ GÉNÉRALE	23
STANDARD CHARTERED BANK	85
STATE BANK OF INDIA	76
SUDWESTDEUTSCHE LANDESBANK	90
SUMITOMO BANK	2
SUMITOMO TRUST & BANKING	16
SVENSKA HANDELSBANKEN	98
SWEDBANK	100
SWISS BANK CORP.	33
TAIYO KOBE BANK	19
TOKAI BANK	8
TORONTO-DOMINION BANK	77
TOYO TRUST & BANKING	28
TRUSTEES SAVINGS BANK GROUP	93
UNION BANK OF SWITZERLAND	31
WESTDEUTSCHE LANDESBANK	39
WESTPAC BANKING	59
YASUDA TRUST & BANKING	22
ZENSHINREN BANK	43

■IS GREED DEAD? • JAPAN'S HOT LUXURY CARS • YOUR INVESTMENT STRATEGY NOW■

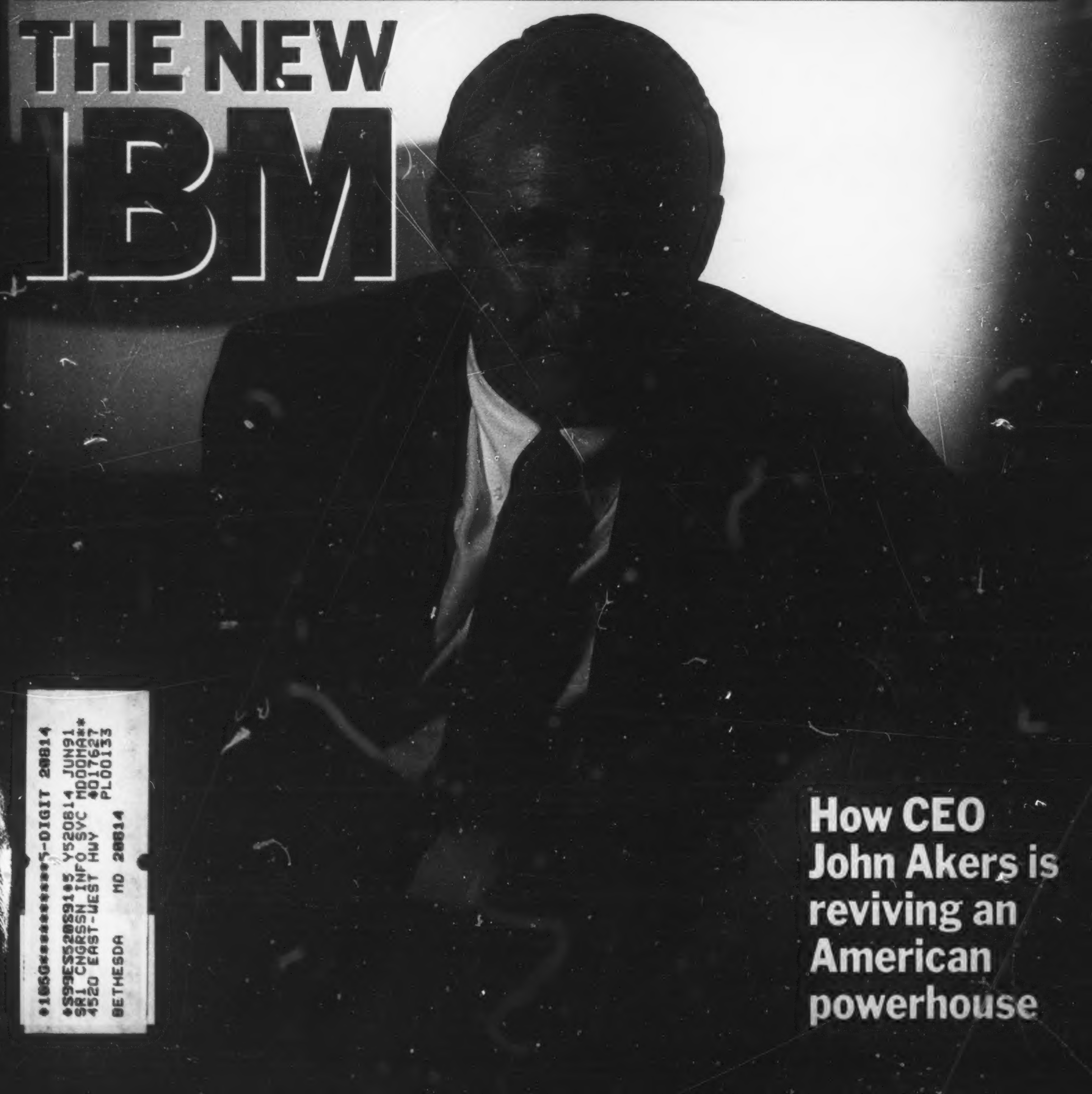
C 8900 - 1

AUGUST 14, 1989

$3.50

FORTUNE

THE NEW IBM



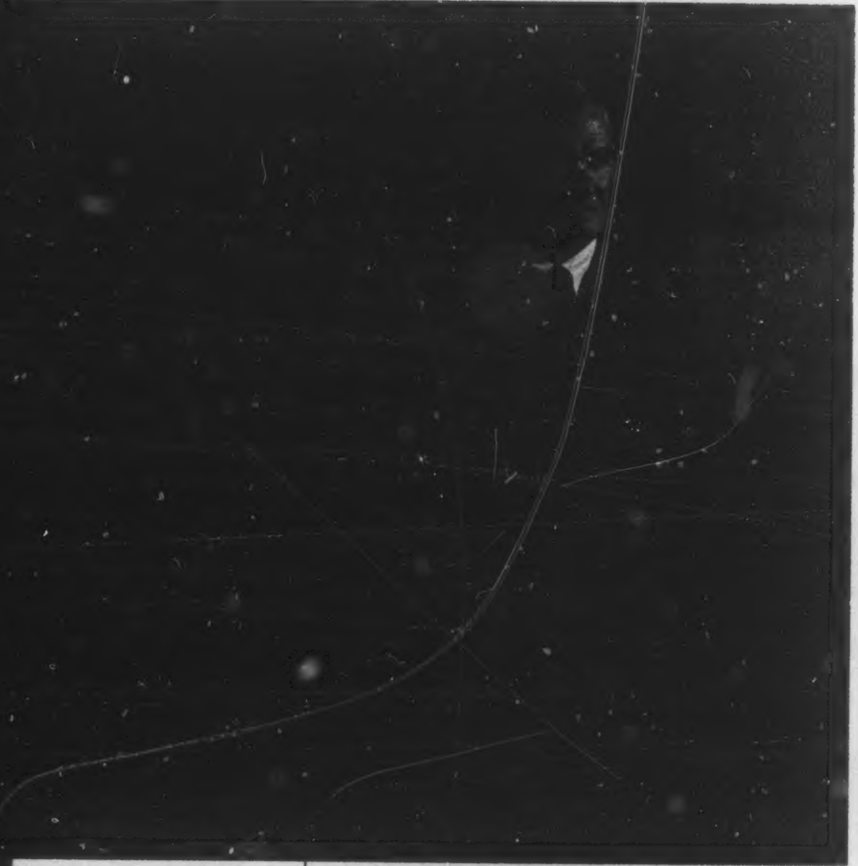
*1060*************5-DIGIT 20814
*S99ES520S9105 Y520814 JUN91
SR1 CNGRSSN INFO SVC MDOOMA**
4520 EAST-WEST HWY *D017627
PL00133

BETHESDA MD 20814

How CEO John Akers is reviving an American powerhouse

AUGUST 14, 1989

FORTUNE



Managers don't waste time politicking. Now the final arbiter is one level up. PAGE 30

COVER AND ABOVE: IBM CEO John Akers was photographed at the company's headquarters in Armonk, New York, by Gregory Heisler.

MANAGING/Cover Story

REINVENTING IBM 30

CEO John Akers has shattered tradition by publicly discussing the company's shortcomings. Better yet, he has set out to fix them. He's reorganized the bureaucracy so that managers have clear authority to get their jobs done. And he's redefined the purpose of those jobs. Akers wants to make IBM the "world's champion in meeting the needs of customers." Talk to other executives—and to the customers—and you see that he means it. *by Joel Dreyfuss*

THE SOCIETY

IS GREED DEAD? 40

The party may be over for the Money Society of the 1980s. The idea that what is most important in life is making big bucks is giving way to a belief that getting involved in public service matters. Having found little solace in shopping sprees, yuppies are cutting back on flashy spending. Instead, saving and family are in, and helping has become hip. *by Ronald Henkoff*

THE ECONOMY

HOW CAPITAL COSTS CRIPPLE AMERICA 50

The stunted national savings rate raises capital costs and discourages investment, killing some worthwhile projects. That gives the overseas rivals of U.S. manufacturers a solid advantage. Three key changes in tax law would help to close the gap. *by Louis S. Richman*

DEALS

A LEGAL VICTORY FOR THE LONG TERM 56

By allowing Time Inc. to buy Warner and repel Paramount's hostile bid, a Delaware court backed directors over stockholders in picking the path to corporate value. As a result, look for changes in managerial behavior. *by Bill Saporito*

COMPETITION

HERE COME JAPAN'S NEW LUXURY CARS 62

First out of the gate, Toyota's Lexus is faster, quieter, and more comfortable than the West German entries. What's more, it's dramatically cheaper. Question: Will Americans forgo Teutonic mystique? *by Alex Taylor III*

VOL. 120, NO. 4

"For better or worse, first the British and then the Continental takeover markets are going to look like the U.S."

PAGE 14

"The reason we're here on earth is not just to earn money and drive a BMW."

PAGE 40

"Since we don't belong to their country clubs, we don't have access to where the sweetheart deals are done."

PAGE 68

"We're losing very good people in the government over the question of pay."

PAGE 84

"Great corporations aren't created by single heroic deeds but by continuous small things done right."

PAGE 87

"I'm a dollar-a-year man now."

PAGE 115

ENTREPRENEURS

THE RISE OF BLACK AUTO DEALERS 68

With a lot of help from Ford Motor Co., their ranks are growing. But don't look for many of them to locate in the ghetto—or under the sign of a foreign carmaker. *by Faye Rice*

CORPORATE PERFORMANCE

COMPANIES TO WATCH 75

Affiliated Publications, after spinning off the red-hot McCaw, plans an encore. *by Nancy J. Perry*

Also: Ply Gem Industries, LDI, Texfi Industries, and Psicor.

POLITICS & POLICY

WHO WANTS TO WORK IN WASHINGTON? 77

It's no wonder businessmen turn down government jobs. The pay is low and appointees are forced to put their life and finances on public display as the ethics barriers keep getting pushed higher. Herein some horror stories, and a few ideas for reform. *by Robert E. Norton*

CEO POLL: HOW TO SPREAD POTOMAC FEVER 84

The FORTUNE 500/CNN Moneyline survey shows corporate chiefs favor higher salaries for government officials and less scrutiny of their private lives. *by Alan Deutschman*

CAN THIS MAN REALLY DELIVER? 87

Postmaster General Tony Frank tells why the Postal Service may be the "biggest management challenge in the world." He wants to spread authority and get help from business.

DEPARTMENTS

EDITOR'S DESK 6

INDEX 10

NEWS/TRENDS 14

Pork barrel and the Stealth bomber, how the ten top law firms grossed out, betting on casinos, the latest in hoosegows, and more.

FORTUNE FORECAST 20

Don't get too attached to the idea of sliding interest rates—a turn is coming. The Fed faces a tough inflation fight. *by Todd May Jr.*

PERSONAL INVESTING 25

How to invest in a slowing economy is explored in FORTUNE's quarterly investment guide.

Also: Portfolio Talk with money manager Kenneth Heebner of Loomis-Sayles.

FORTUNE PEOPLE 115

The man behind Batman's boots, Ross Johnson giving advice, a return to Apple, Alan Bond's troubles, and an export expert. *by Mark Alpert*

ON THE RISE 116

OFFICE HOURS 117

A candidate for Workaholics Anonymous? Use your time differently. *by Walter Kiechel III*

LETTERS TO FORTUNE 119

Assessing Asian immigration, a competitor's view on Boeing, a student's view of B-schools, ozone and those UCLA doctors, and more.

KEEPING UP 123

Political attitudes are biologically inherited, and other surprises. *by Daniel Seligman*

EDITOR-IN-CHIEF Jason McManus
CHAIRMAN AND CHIEF EXECUTIVE OFFICER J. Richard Munro
PRESIDENT AND CHIEF OPERATING OFFICER N. J. Nicholas Jr.
VICE CHAIRMAN Gerald M. Levin
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, John J. Curran, Marta F. Dorion, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Colin Leinster, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Bill Saporito, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Alan Farnham, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, CA), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Robert E. Norton (Washington), Peter Nulty, Brian O'Reilly (Los Angeles), Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Lenore Schiff, Brenton R. Schlender (San Francisco), Patricia Sellers, Andrew Evan Serwer, Thomas A. Stewart, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo), Richard S. Teitelbaum
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Charles J. Attardi, Leslie Brenner, Jonathan Brown, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, David V. Rile, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CONSUMER MARKETING DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

NINA BARNETT

Writer Dreyfuss at IBM's customer center in New York

GETTING INTO THE SOUL of IBM can be as hard as breaking into Fort Knox. But one man with the key is associate editor Joel Dreyfuss, who has long been observing the fundamental changes under way at this tremendous global enterprise. As FORTUNE's Tokyo bureau chief from 1986 to 1988, he wrote about IBM's experiments with new—and ultimately successful—strategies to win back customers it was losing to Fujitsu and NEC.

For this issue's cover story Dreyfuss and reporter Susan Caminiti interviewed dozens of executives of IBM and its competitors—and were astounded by the sweep of change. Chief Executive John Akers, says Dreyfuss, "was amazingly blunt about mistakes IBM has made in the past." Akers is working to make Big Blue much more responsive to customers and is shaking the corporate culture to its core. Says Charles Burck, who edited the story: "IBM's executives and customers clearly talked candidly, but it was Joel's instinct for the telling detail that revealed the critical evidence."

Dreyfuss is well equipped to plumb developments at the world's computer companies. Son of a Unesco official from Haiti, he grew up in such faraway places as Paris and Monrovia, Liberia, developing an interest in ham radio to keep in touch with others. When personal computers came out he embraced them, partly to tap into electronic bulletin boards. He still queries techies on CompuServe to get the latest on new products. "It can be better than ham radio," he says.

The most recent challenge from Japan comes not in computers but luxury cars. To assess Toyota's new $35,000 Lexus, due to arrive in America in August, associate editor Alex Taylor traveled to remote northern Japan, where he became the first American journalist ever allowed inside Toyota's private test track. His conclusion: "Toyota has made an amazing leap from a manufacturer of good but pedestrian cars to a producer of one of the best cars in the world." On a West German *Autobahn* Taylor had already taken a Lexus up to 150 mph before prudence made him stop. His story moves along just as smoothly as a Lexus, and once started, you won't want to stop.

HANS VERHUFEN

Writer Taylor aboard a Toyota Lexus in West Germany

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President, Michael J. Klingensmith, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, Fla. 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-541-1000. © 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company. **For subscription queries, call Customer Service at 1-800-541-1000.**

WIDE WORLD

DAVID WOO—SYGMA

Landing gear down, the Stealth bomber takes its maiden flight from an Air Force base in California. At right: the Osprey, aloft over Texas.

THE PORK BARREL AND THE STEALTH

■ Chief executives at major defense contractors, such as **Northrop**'s Thomas Jones, will be gritting their teeth as Congress takes the knife to the Pentagon's proposed $306 billion budget. But don't look for fatalities among the manufacturers. Congress will reach a compromise, stretching out production. This will save money and jobs for now but will send unit costs into orbit.

DAVID STRICK—ONYX

Thomas Jones

Programs at risk:

- Northrop's Stealth bomber. At $530 million each, the radar-evading B2 has become the symbol of a big defense program gone awry. Half Northrop's 1988 revenue of $5.8 billion and 12,000 of its 44,000 workers are involved in the project. But even if Congress cancels the program outright, the company would still have a good shot at getting much of the $75 billion proposed for the Advanced Tactical Fighter, a Stealth jet. Northrop could build it at the B2 plant. **Lockheed** has been virtually hand-building similar fighters for years—and Air Force pilots have flown them. But Lockheed doesn't have a suitable factory.
- **Grumman**'s F-14D fighter plane. Defense Secretary Cheney doesn't want to buy 127 modernized versions of the F-14 at $50 million apiece. If Congress agrees, it would be a body blow to Grumman, which would have to lay off or transfer as many as 5,000 of its 30,000 workers. Grumman could modernize most of the Navy's 470 current F-14s at up to $40 million each.
- **Boeing** and Bell Helicopter's V-22 Osprey. Do the Marines really need 552 tilt-rotor planes, which can take off like helicopters, at $23 million a copy? More than 3,000 jobs are at stake at the two companies. But Boeing is prospering from its commercial airplanes. Bell's parent, **Textron**, needs the project more.

The inevitable congressional compromise will be the same old story. Says Paul Nisbet, a Prudential-Bache analyst: "The real argument isn't over cost. It's over pork barrel."

– Anthony Ramirez

MOVE OVER, MTV . . .

■ Next time you see a TV news anchor nodding wisely at what a chief executive or somebody else important or famous has to say, remember that the newscast footage, prepackaged as video news releases (VNRs), may come directly from corporations. VNRs tell a story, tout a product, or publicize an event. The best so faithfully imitate actual news segments that network, local, or cable news editors desperate for filler can run them unedited, as some of them do.

Medialink, a Manhattan service that distributes VNRs by satellite, also tracks their ratings. Here are the most widely viewed Medialink releases for the first six months of the year (along with the number of viewers in millions):

- **Sears** announces the shutdown of its stores for repricing all its merchandise (70.2).
- **HBO** displays a video version of the *Sports Illustrated* swimsuit issue (45.6).
- **Showtime** promotes pay-per-view coverage of a Robbie (spawn of Evel) Knievel motorcycle stunt (39.8).
- **Disney** catches quarterback Joe Montana in an "unguarded" moment saying that he will go to Disneyland after the Superbowl (18.2).
- Barbara Bush speaks out against child abuse for **Childhelp USA** (15.7).
- The **Las Vegas Visitors' Bureau** depicts Valentine's Day nuptial action in wedding chapels across the city (15.1).
- **Maytag** says Jesse White, the company's veteran Lonely Repairman, will retire (14.8).
- **Disney** opens its "Blast to the Past" at Disneyland by showing Chubby Checker still alive and twisting (14.8).

– Alan Farnham

HOW TEN TOP LAW FIRMS GROSSED OUT

■ Last year was boom time for U.S. corporate law firms that reeled in the moola from a spate of takeovers, leveraged buyouts, mergers, and other deals. The *American Lawyer* figures that the top 100 grossed $10.6 billion, a 23% increase over 1987. Editor Steven Brill says the magazine got most of the numbers in confidence from the firms themselves and used informed estimates for others. But he doesn't say which are which. These ten grossed the most.

Firm	Gross Revenues $ millions
SKADDEN ARPS SLATE MEAGHER & FLOM New York	$440
JONES DAY REAVIS & POGUE Cleveland	$264
BAKER & MCKENZIE Chicago	$261
GIBSON DUNN & CRUTCHER Los Angeles	$236
SHEARMAN & STERLING New York	$228
DAVIS POLK & WARDWELL New York	$219
SULLIVAN & CROMWELL New York	$210
CRAVATH SWAINE & MOORE New York	$200
FRIED FRANK HARRIS SHRIVER & JACOBSON New York	$194
LATHAM & WATKINS Los Angeles	$187

IS GREED DEAD?

The party may be over for the Money Society of the 1980s. Flashy spending is out, saving and family are in, and helping has become hip. Credit yuppies in part.

■ *by Ronald Henkoff*

DON'T DOFF your designer dinner jacket just yet, but be warned: The long, glittery banquet may be coming to a close, the waiters serving the final candied course. The watchwords of the Eighties—make big bucks, borrow, spend, and flaunt—have not disappeared. But new conceits are creeping into the social lexicon, notions like save, nurture, and share. Is greed dead? No, not really. It is—and probably always will be—alive and well in Washington, on Wall Street, even among certain citizens of Small Town U.S.A. But evidence suggests that the great decade-long national binge is beginning to leave a funny taste in the mouth and that America is searching for a more balanced diet.

The conspicuous consumption, cold careerism, and self-centered spirit that made up so much of business as usual in the Eighties now come across as a bit tacky at best, ruinous at worst. Ivan Boesky, the arbitrager who told an applauding Berkeley university audience in 1985 that "greed is healthy," now has time to contemplate ethics at the Lompoc federal prison camp in California. Former House Speaker Jim Wright and Democratic whip Tony Coelho have forfeited the positions they loved, tainted by allegations that they bent the rules to enrich themselves. Michael Milken, high priest of junk bonds and recipient of a $550 million pay package in 1987, has been indicted and let go by his firm. Leona Helmsley, self-styled queen, ends up on trial as a tax cheat of regal proportions.

The forces of reform, moderation, and probity appear to be gaining ground. Rudolph Giuliani, who as federal prosecutor helped bust Boesky, Milken, and assorted mobsters, is running for mayor of New York City—and doing well in the polls. The press voices outrage at exorbitant executive salaries and investment banking fees, and the public takes up the cry. Jack Kemp vows to clean up an influence-peddling mess at the Department of Housing

PAUL FETTERS

JOHN S. ABBOTT

"*The 1990s should be the turn for young men and women who came of age in the Kennedy years.*"

—ARTHUR SCHLESINGER JR.
HISTORIAN

and Urban Development inherited from the oh-so-fun Reagan years, vowing that future subsidies will help the "needy, not the greedy."

None of these developments point, ipso facto, to a nascent epidemic of piety and altruism. "Conscience," as H. L. Mencken observed, "is the inner voice that warns us someone may be looking." But as the high and mighty tremble and topple, the rest of us *are* pulling back from the excesses of the Eighties. We are buying more temperately, saving more deliberately, and borrowing more prudently.

Three out of four working Americans age 25 to 49 would like "to see our country return to a simpler lifestyle, with less emphasis on material success," according to a poll by Research & Forecasts for Chivas Regal, a Seagram brand. Phony nostalgia? Perhaps a little. But look at the trends: The growth of real per capita consumer spending is down from around 3.5% a year in the mid-Eighties to 1.9% last year. The savings rate bottomed out at 3.2% of disposable personal income in 1987 and has trended slowly upward ever since, reaching 5.2% recently. The growth of per capita consumer debt is down from 9.2% in 1985 to 3.2% last year.

"*From now on, any definition of a successful life must include serving others.*"

—GEORGE BUSH
PRESIDENT

The "national mood," never easy to chart in a country of 249 million, doesn't necessarily change with the passing of a decade or the arrival of a new President. But George Bush does seem to have given voice to a widespread yearning for a shift toward values that aren't calibrated in BMWs, Burberrys, and beach houses. "We are not the sum of our possessions," he said at his inauguration. "We cannot hope only to leave our children a bigger car, a bigger bank account. We must hope to give them a sense of what it means to be a loyal friend; a loving parent; a citizen who leaves his home, his neighborhood, and town better than he found it."

THE AMERICAN FAMILY, sundered, maligned, and neglected for so many years, is edging back toward center stage. Marriage remains popular, the divorce rate hasn't budged since 1986, and the birth rate is rising. For many harried parents, the workaholic ethic of the Eighties has begun to fray some, abraded by a growing desire to spend more time with the kids. When the Chivas Regal poll asked working Americans to identify the most important indicator of success, 62% said "a happy family life." Only 10% said "earning a lot of money."

Across America, volunteerism is thriving. The Gallup organization reports that the proportion of adult Americans devoting time to "charity or social service activities" has grown steadily over the past decade, reaching 39% in 1987, the latest year for which figures are available. Call it a vindication of Reaganomics (a sign that the government can't do everything) or a repudiation of Reaganomics (a sign that the government isn't doing enough). What is incontestable is that helping has become hip, especially among college students and young professionals, groups recently notorious for their selfishness. The Campus Outreach Opportunity League (COOL), founded five years ago to encourage community service, now advises volunteer organizations at 550 colleges and universities.

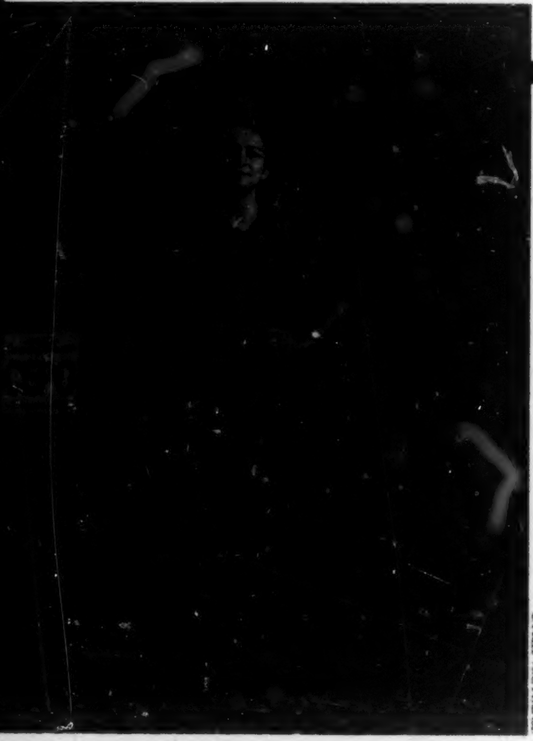
We can see a modest trend away from the lemming parade of the best business and law graduates heading to high-paying, high-pressure jobs at big-name firms. A few are launching nonprofit organizations to aid the poor, the ill, and the illiterate. "There is a reawakening of the need for public commitment in this country," asserts Michael Brown, Harvard College '84, Harvard Law '88. "It's the end of the 'me decade' and the beginning of the 'we decade.'" Brown, 28, is a cofounder of City Year, a Boston "urban peace corps" run primarily by young professionals and backed by $760,000 in corporate and individual donations.

"*People are trying to use ideals to connect with something beyond their bank accounts.*"

—DOUGLAS LABIER
PSYCHOANALYST

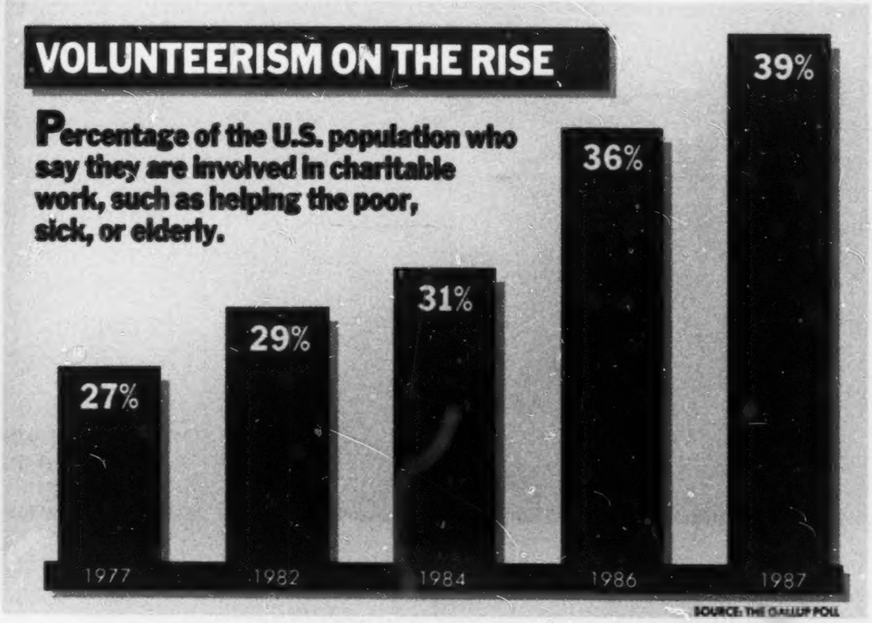
Public service, a concept that not too long ago seemed as

KATHERINE LAMBERT



CHARLES ARCHAMBAULT

Maria Foscarinis lobbies for the homeless.



SOURCE: THE GALLUP POLL

anachronistic as pillbox hats and Apollo moon missions, is making a comeback. Federal legislators have introduced no fewer than nine bills calling for government funding of youth service programs. President Bush recently announced his own plan, Youth Engaged in Service to America, or, in the inevitable snappy acronym, YES to America. The proposal for young people age 5 to 25 will be part of the broader Points of Light Initiative, a $25-million-a-year plan to promote community service. The Bush program, says Charles Moskos, a Northwestern University sociologist and author of *A Call to Civic Service*, "is sort of unfocused, but at least it's the first time a President has spoken like that since John Kennedy."

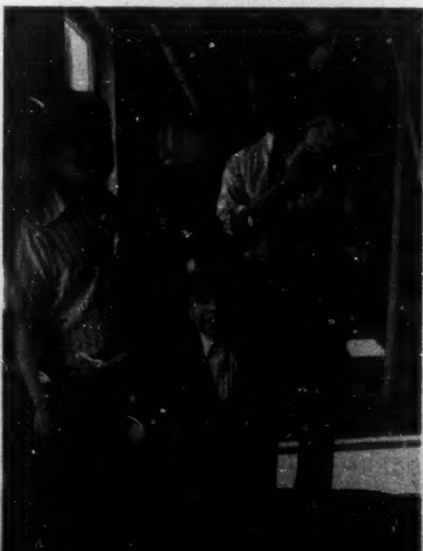
George Bush, to paraphrase Lloyd Bentsen, is no John Kennedy. But clearly there is more than just hot air to the "new breeze" Bush claims is blowing through America. What's going on?

THE MANIFEST contradictions of the decade now ending are finally catching up with us, argues Rosabeth Moss Kanter, Harvard business professor and author of *When Giants Learn to Dance*, a book about management and careers in the Nineties: "The Eighties were a time of incredible prosperity for some but also a time when average family income was flat, when our infrastructure was crumbling and our educational system was deteriorating. It's not surprising that people in the Nineties are waking up."

Waking up may entail a measure of guilt. Says Ginny Blissert, formerly a New York investment banker: "When you live in the lap of luxury and you walk to work past people living in such poverty, you begin to feel that any little thing you can do must somehow make a difference." Blissert is now a student at Northwestern's Kellogg School of Management, where she serves as a co-chair of Business With a Heart, a student-run community services program.

The undulations of the economy in the past two years have persuaded at least some of us that money is a fickle friend. While the October 1987 stock market crash didn't turn out to be the apocalypse many predicted, it did knock a lot of giddiness and hubris out of the system. Following on the heels of the crash, the slowing appreciation of house prices and the job insecurity brought on by takeovers, restructuring, and foreign competition have been enough to send people in search of firmer foundations for their lives. "Tie your self-esteem too narrowly to your paycheck and you'll be in trouble," observes Laurence Shames, author of a new book titled *The Hunger for More: Searching for Values in an Age of Greed.*

Developer Chris Noon helps with housing.



ANDY LEVIN

It may be too that greed or at least hyperconspicuous consumption has, like many fashions, simply worn itself out. Popular culture no longer glorifies to quite the same extent the acquisitiveness and chicanery of what Thorstein Veblen called the "pecuniary life." *Dynasty* has gone off the air, and *Dallas* has fallen in the ratings. Shows that emphasize home, hearth, and children—*Cosby* and *The Wonder Years*—are thriving. "People don't want to look like they're living too well," argues Ash DeLorenzo, who bears the title trend director at BrainReserve Inc., a New York market consulting firm. Big splurges, such as flashy imported cars and fur coats, are out, he says. Little indulgences—gourmet ice cream, premium vodka, and manicures, for example—are in.

American society, in the view of historian Arthur Schlesinger Jr., oscillates in 30-

year cycles between periods where private pursuits and self-interest predominate (the Roaring Twenties, the Eisenhower Years, the Money Society of the 1980s) and periods where activism and common purpose prevail (the Progressive Era at the beginning of the century, the New Deal, the New Frontier of the early 1960s). "There has been a kind of cyclical rhythm," Schlesinger says, "moving from the belief that having everyone make a fast buck for himself was the best way to save the nation to the notion that public service was the best way." The society avidly pursues personal wealth until, with our oft-chronicled propensity for excess, we burn ourselves out. Then the cycle turns, and we pursue commonwealth.

SOCIAL CRITICS can exaggerate the extremes, and may well have done so with the greediness of the Eighties. To begin with, most Americans can't afford to be seriously spendthrift. A study by the Conference Board and the Census Bureau found that only 28.9% of all American households have discretionary income, defined as the money left in the family kitty after taxes and basic everyday expenditures.

But those who do have discretionary income have been anything but discreet. The icon of the Eighties, as raised up by the media, is the young urban professional—the term yuppie first became widespread in 1983. By now we're all numbingly familiar with the habits and appurtenances of the species—their $90 running shoes, $900 briefcases, and $900,000 condos. It's easy to forget how few of these folks there really are. "Only 0.3% of Americans are both younger than age 40 and earn more than $75,000 per year," *American Demographics* magazine pointed out last year.

Still, as the most conspicuous members of the baby-boom generation, yuppies have had a disproportionate impact on society. They have seemed to embody the aspirations of the 78 million Americans born between 1946 and 1964, a generation that has powered the social movements of the past three decades, whether activism, narcissism, careerism, or materialism.

What made the generation that sought nirvana in the Sixties turn to mammon in the Eighties? James Burke, the thoughtful former chief executive of Johnson & Johnson, believes the answer lies in the double failures of the Vietnam war and the Great Society initiatives: "A lot of people may have said, 'The hell with that. I don't want to go to war, and I'm not going to worry about the social problems either.' " Subsequent developments in the public realm, from Watergate to Contragate, only strengthened that resolve.

Douglas LaBier, a Washington psychoanalyst who directs an effort called the Project on Adult Lives, describes the evolution—or failure to evolve—of the boomers' thinking: "The yuppies are direct descendants of the hippies. Among them you find a lot of cynicism and despair over the inability of idealism to coalesce into any kind of social change or political leadership." LaBier interviewed 220 professionals age 25 to 47 for his 1986 book, *Modern Madness: The Hidden Link Between Work and Emotional Conflict.* His subjects, seemingly healthy people, were often troubled by the values they encountered on the job—as reflected in dishonesty, infighting, and self-aggrandizement. Sometimes, says LaBier, they sought an elusive solace in materialism, going on shopping sprees in an attempt to cure depression or to find some sort of fulfillment.

LaBier believes that much of Eighties greed was motivated by fear, by pervasive anxiety about falling behind economically. For many of the younger boomers, the decade was a time of slipping living standards. From 1979 to 1987 median real family income in households headed by people 25 to 34 declined 6.4%, reports the Census Bureau. Back then some of these sliding boomers plunged into debt just to stay even. They bought fancy *objets* to fool the neighbors—and them-

Kellogg MBA students raised $27,000 for this shelter for battered women and their kids.

ANDY LEVIN

selves. "Eighties greed," writes author Shames, "was a nervous, twitchy, looking-over-the-shoulder-while-running-full-speed-ahead sort of affair."

The boomers are moving into middle age, and at least in the near term, their economic situation is likely to improve. This could provide the breathing room they need to embrace new, less frenetic pursuits. More and more of them are getting married, moving to the suburbs, raising kids—in short, settling down. A *Rolling Stone* survey of boomers last year found that 92% had or wanted to have children. Says Peter Meola, 33, a Seagram marketing vice president: "Home life and family have become much more important among the people I associate with. Now it's not so much, 'Let's go to that new restaurant,' or 'Let's see the latest movie,' but, 'Let's get together with our friends and their kids and have a barbecue.' " As the boomers age, predicts Edward Yardeni, chief economist at Prudential-Bache Securities, they will earn more and save more. He thinks they could help boost America's savings rate to 10% over the next five years, a view that other economists find overly optimistic.

DOUG MENEZ

Arthur Schlesinger also has great expectations for the older boomers, those born between 1946 and 1957. As they rise to positions of leadership, he predicts, they will bring with them the heady idealism they soaked up during their youth in the Sixties. Critics accuse Democrat stalwart Schlesinger of romanticizing the Sixties: While that turbulent decade did see tremendous advances for minorities and women, it was also a time of assassination, war, and drug abuse. Still, the emotional pull of that era is intense. When the opinion research firm Yankelovich Clancy Shulman asked people in their 30s for their attitudes on the Sixties, 61% viewed it as a constructive period and 51% said they missed the sense of community that existed then.

Maria Foscarinis, a former Wall Street lawyer, carries the banner of the Sixties with her in her new job as director of the National Law Center on Homelessness and Poverty. Foscarinis, 33, has an impeccable yuppie résumé. A graduate of Barnard College and Columbia Law School, she clerked for a federal judge, then joined Sullivan & Cromwell, an elite New York firm. Says she: "That's what you're supposed to do if you want to be successful."

Foscarinis found the work, which included defending an investment bank embroiled in an insider-trading scandal, intellectually stimulating but not particularly fulfilling. "At the end of the day there's something missing," she says. She yearned for a job that would actively advance her ideals—Sixties ideals, as she sees them—"about how the world should be." So in 1985 she took a pay cut from $70,000 to $10,000 a year and opened the Washington, D.C., office of the National Coalition for the Homeless. Since then, the coalition has successfully championed the cause of the homeless in the courts and Congress. In June, Foscarinis left the coalition to start her own organization, one that will focus more broadly on poverty.

> *"Child care has become a major issue with so many of the yuppie genre having kids."*
>
> **– TOD GRANTHAM**
> MANAGER

NOT MANY PEOPLE are prepared to rearrange their lives so completely, but many well-paid professionals are making more subtle changes. "People are not giving up material goods," observes Douglas LaBier, "but there's more of a letting go of the need to acquire. The desire to have, to get, to possess becomes more in balance with the other aspects of life." Consider the example of Christopher Noon, 39, a Chicago-area developer who donates large amounts of his time and income to Habitat for Humanity International, a Georgia-based organization that builds houses for poor families and counts among its volunteers Jimmy Carter. Says Noon: "The reason we're here on earth is not just to earn money and drive a BMW."

Boston psychotherapist Steven Berglas similarly sees a growing realization that the Eighties' symbols of success—a prestigious and time-consuming job, a six-figure salary, and an abundance of material possessions—is incomplete: "People are saying, 'I've got money and I've got power, but it's worthless unless I can be happy.' You can only collect so many bottles of Pouilly-Fuissé, and then it becomes grape juice." In increasing numbers, says Berglas, his patients are discovering the joy of helping the community—and becoming part of it—through charitable activities.

Employers may want to pick up on the trend: In the Nineties sponsoring volunteer efforts and giving to charity may prove a valuable way to win the good will of the troops. Some 45% of the respondents to the Chivas Regal poll said they would be more

REPORTER ASSOCIATE *Rosalind Klein Berlin*

loyal to their company if they knew it donated money to a public service cause. MBA students active in Northwestern's Business With a Heart program say that when they hunt for jobs on graduation, they will seek out firms that do *pro bono* work. Observes Shirley Keller, a senior official at Volunteer—The National Center, an information clearinghouse for charitable activities: "It's just beginning to dawn on some companies that community service can be good for productivity, morale, and loyalty."

COMPANIES HAVE an even bigger lesson to learn for the less greedy Nineties: the increasing importance of the family. You can count on the baby-boomers to force the issue of family vs. work onto the corporate agenda. Fully 73% of all women age 25 to 34 now work for pay, as do half of all women with babies under a year old. For them and their husbands, child care, flexible hours, and job sharing are pressing concerns. Says Dana Friedman, co-president of the New York–based Families and Work Institute: "People have no choice but to bring these problems to the workplace."

When Tod Grantham, 33, a Silicon Valley technical manager with a working wife and baby daughter, went looking for a new job, he had strict criteria: Anybody he would work for had to provide child care, flex-time, and "an understanding that the family was not to be secondary." He received several offers, including one that would have paid $5,000 a year more than the post he ultimately accepted at Oracle Corp., a computer software company in Belmont, California, that met his standards. "The more progressive companies realize that there are families out there that were getting shortchanged," says Grantham. "They're starting to pay more attention to home life." Pushing this change in attitude, says Grantham, are yuppies with children.

Well, there they go again, once more at the forefront of social change. As Grantham points out, families, unlike companies, aren't all that susceptible to hostile takeovers or leveraged buyouts. "A family," he says, "has got a lot more longevity to it, and it's not something you want to ignore for the sake of another fast buck." As social philosophies go, that's a few light years away from the notion that greed is healthy, and a good deal more salubrious. If greed isn't dead, it certainly is hurting. ■

HUNTSVILLE

Showing You Our High-Tech Achievements Takes A Lot Of Space.

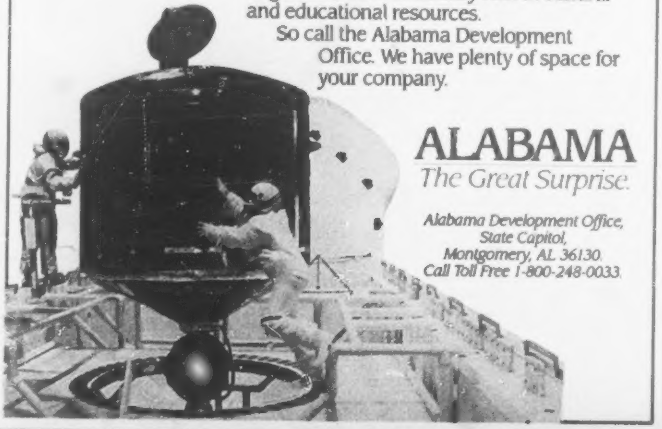
Our community's high technology achievements are so vast that we can't tell you about them in this limited space.

We can't even list the more-than-50 Fortune 500 companies with a strong presence here.

The late Dr. Wernher von Braun led the way as we developed an ideal setting for high-technology business. We're the home of The Marshall Space Flight Center and the Army Missile and Strategic Defense commands.

With more than 700 non-medical doctorates and 10,000 engineers, we're unusually rich in cultural and educational resources.

So call the Alabama Development Office. We have plenty of space for your company.



ALABAMA
The Great Surprise.

Alabama Development Office,
State Capitol,
Montgomery, AL 36130.
Call Toll Free 1-800-248-0033.

CROSSCURRENTS

AIDS
BLACK MONDAY
CORPORATE IDENTITY
RESTRUCTURING
TAKEOVERS
OUR AGING POPULATION
GLOBAL COMPETITION

These words were heard frequently as top communicators from all over the country gathered at the 1988 FORTUNE Corporate Communications Seminar to discuss "Communication in an Era of Change."

Now you can get the inside stories on how Allstate, MBIA, IBM, ITT, Motorola, Ryder and other companies are operating and surviving in a dramatically changed business environment.

You'll find their ideas and strategies in *Crosscurrents #17*, FORTUNE's annual book of seminar presentations. It's a rare opportunity to see how companies are defining their objectives and refining their values to meet today's challenges.

FORTUNE

Order your copy today. Send your check (made payable to FORTUNE) for $22 (add $2 for addresses outside the U.S.) to:

FORTUNE *Crosscurrents #17*
Time & Life Building, Room 15-35B
Rockefeller Center
New York, NY 10020

THE ECONOMY

HOW CAPITAL COSTS CRIPPLE AMERICA

The stunted national savings rate raises the cost of money and discourages farsighted investing. That gives rival manufacturers overseas a big competitive advantage. ■ *by Louis S. Richman*

JAMES SCHNEPF

Shut down: Control Data's promising ETA project in Minneapolis was swept out of the supercomputer sweepstakes by high-cost capital.

AS MANAGEMENT SAW IT, the ETA supercomputer was going to make Control Data a serious competitor in the scientific computing field once again. But by last spring the project had absorbed some $350 million, and further development would have cost $50 million a year before ETA became self-financing in 1991. The bankers were fidgeting, the shareholders clamoring for higher earnings. Meanwhile, Japan's deep-pocketed computer giants, Hitachi, Fujitsu, and NEC, patiently stalked ETA's market. In April, Control Data called it quits. Says former ETA president Carl Ledbetter: "If our capital costs had been lower, ETA could have survived."

Cray Research, the stunningly successful pioneer of high-speed computing, had two promising programs under way to develop the next generation of supercomputers. But each would require investments of $150 million to $200 million to complete—too heavy a load for a company with just $756 million in annual sales. In May, Cray hived off one of the projects to founder Seymour Cray, who is setting up a new venture called Cray Computer Corp. "We try to ignore quarterly earnings, but we can't afford to sustain losses in the supercomputer business and keep shareholders happy long term," says John Carlson, Cray's chief financial officer. "Fujitsu can."

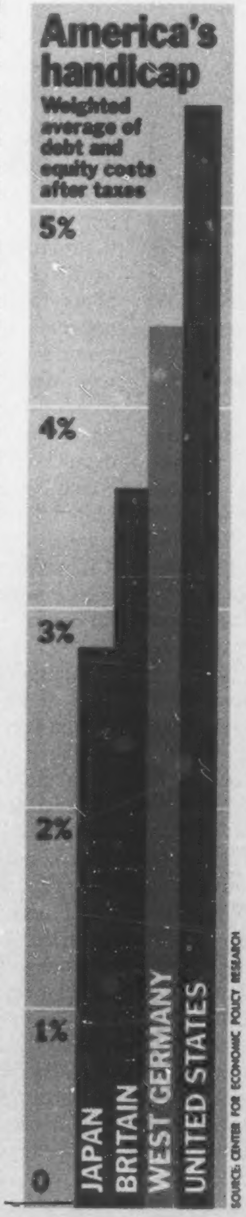
The decisions at Control Data and Cray point up a grave problem for America's

REPORTER ASSOCIATE *Frederick Hiroshi Katayama* competitiveness, and not just in the supercomputing field. The patient investment capital that companies need to nurture expensive, long-term projects to profitability is costlier in the U.S. than among its major global rivals. American companies pay creditors more interest and have to assure shareholders higher returns.

These costs explain the oft-noted propensity of American corporations to focus on the short run. The cost of capital determines the discount rate companies use to compute the present value of future earnings. The higher the returns investors expect, the higher the discount rate, and the sooner a project has to begin paying off.

How do capital costs compare around the world? A rigorous effort in 1986 to measure them by economists B. Douglas Bernheim of Northwestern and John B. Shoven of Stanford reveals that throughout the 1980s the U.S. has borne the highest cost of capital of the leading industrialized economies (see chart). Simply put, with an after-tax cost of capital nearly twice as high as Japan's, American companies can afford to wait just half as long as their Japanese competitors for capital investments to reach an acceptable level of profitability.

Higher inflation in the U.S. explains only part of the difference: Real interest rates (that is, after the inflation component is deducted) are 5% in the U.S., vs. 3.5% in West Germany and 2.5% in Japan. The blame lies mainly in America's low national savings rate. Like all prices, the price of capital is a matter of supply and demand, with the puny supply of U.S. savings a guarantee that the price will be high. Though the savings rate has risen modestly in the past year, private savings, currently 4.6% of GNP, remain well below the 7% to 8% for most of the postwar period. And with most of what's saved going to finance the federal budget deficit, net national savings available for private investment has shrunk to 2.8% of GNP, the lowest of any major industrial nation.



SOURCE: CENTER FOR ECONOMIC POLICY RESEARCH

Why worry about the cost of capital now? American companies, after all, have been lifting capital spending as they strain to keep pace with domestic growth and meet strong demand for U.S. exports. FORTUNE estimates that this year real investment will rise a robust 4%, following a 9.5% jump in 1988. The national endowment of capital stock is growing at close to 3% a year, which is about equal to the long-term trend of output. And in recent years American manufacturers have got some of their best productivity gains not from new machinery but from learning to manage the production process more wisely.

But the Japanese, among others, keep working smarter too, and at the same time are spending relatively more on plant and equipment. Compared with its rivals, the U.S. is grossly underspending.

Over the past five years real fixed investment as a percent of GNP has averaged almost 30% in Japan, vs. around 20% in Europe and just under 15% in the U.S. According to Stephen Brooks, an economic consultant, annual gross investment per factory worker in Japan, which was 40% higher than in the U.S. from the early 1970s to the early Eighties, had widened to 85% by 1986 (Brooks adjusted for changes in exchange rates). Japanese companies were investing at a rate of $7,625 on average for each worker, he says, vs. $4,130 for their American counterparts. Says Robert Noyce, the inventor and entrepreneur who now heads the Sematech research consortium: "It's like giving American workers a shovel and telling them to compete against a backhoe."

Today's quicksilver international capital markets are assumed by many people to flatten out differences in capital costs as investors whiz currencies around the globe in pursuit of the highest returns. High real U.S. interest rates and a decline in the dollar *have* hauled buckets of that restless foreign capital out of the ether. Since 1985, 60% of U.S. net investment has been financed from abroad. But it's not enough to meet all of America's needs—and Americans would not want it to be, since that would mean surrendering an ever-growing share of U.S. industry to others.

KAY CHERNUSH

Patient West German money will upgrade this former Bendix fuel injector factory.

Including depreciation, capital typically accounts for some 25% of all costs for manufacturers. "International competitors have a huge advantage over U.S. business on over a quarter of all their costs," says Peter Rona, CEO of IBJ Schroder Bank & Trust. "That handicap and its effects on management investment decisions are becoming the major competitive issues of our times."

EXPENSIVE MONEY forces U.S. managers to expend enormous mental energy on capital allocation decisions. Most hew tightly to tools of financial analysis that seek, with rocket science precision, to maximize investment returns on a project-by-project basis. But investing strictly by the numbers leads to perverse effects that stifle many worthwhile long-term investments. With high capital costs setting a high discount rate, safe long-term projects that offer lower returns are often spurned. Riskier projects make the cut because they promise bigger paybacks. Projects with quick payoffs sail through.

American managers are learning to stretch their relatively limited resources by thinking strategically. Enrique Falla, Dow Chemical's chief financial officer, estimates

Western Digital CEO Roger Johnson is building this factory mainly with internal funds

DARRYL ESTRINE—ONYX

that the foreign-controlled companies that now own 32% of the chemical industry pay three percentage points less for borrowed money and six points less for equity financing. To compete, Falla follows a well-honed strategy that may not maximize returns in the short run but optimizes them over the long term. When it's done properly, he says, investors can appreciate the results.

Since it restructured in 1985 Dow has concentrated long-range spending on a small group of promising technologies—among them engineering thermoplastics and pharmaceuticals. Dow intends to be a leading producer in each, and expects each to yield market-beating earnings growth over time. This year Dow is spending more than $2.5 billion for R&D and long-term investments in these areas. The company looks for what Falla describes as "cascading technologies?'—related investments that complement each other and add up to more than the sum of their parts.

As Falla describes the strategy, Dow invests heavily to "feed the pipeline" with new products, and is prepared to absorb losses for five years or longer at the expense of short-term gains until the profits start pouring in. He expects that the reservoir he is filling today will supply Dow with earnings through a downturn in its notoriously cyclical industry.

The strategy doesn't end with new-product development. Dow's recent agreement to acquire a majority stake in Marion Laboratories would bolster its strength in pharmaceutical marketing and sales. Though the stock market marked Dow's shares down after the announcement, Falla thinks shareholders will eventually see the light. Says he: "Wall Street investors are rewarded by how much they beat the market this quarter. But if Dow's return on equity outperforms the S&P 500 by just 5% during an expansion and businesses like pharmaceuticals give it room for future growth when the economy heads into recession, the portfolio managers will brag about what a smart investment they made in every brochure they send to their clients."

NONETHELESS, there's no substitute for patient dollars. When foreign owners with deep pockets step in, promising businesses that languished for want of sustained investment under U.S. ownership typically begin to flourish. Allied-Signal Corp.'s Bendix Electronics Group was a pioneering leader in the development of engine sensors and antilock brakes. But it would have had to shell out $1 billion over the next five years and suffer an annual cash drain of up to $80 million to fully exploit those technologies. Unable to tolerate that expense, Allied-Signal last year sold Bendix to Siemens, the West German electronics giant.

By stepping up investment, Siemens plans to transform the renamed Siemens-Bendix Automotive Electronics Group from a so-so niche player into a full-line powerhouse. Says Timothy Leuliette, the former Bendix group president who now heads Siemens's new unit: "Instead of asking for monthly cash flow reports as Allied-Signal had, Siemens asks me what my business is doing to become the global leader by the end of the century." Siemens, rich with cash, plans to finance the expansion internally. And in any case, under West Germany's universal banking laws, the banks are among Siemens's largest shareholders. As such, they are less concerned with quarterly or yearly ups-and-downs than with long-term prospects.

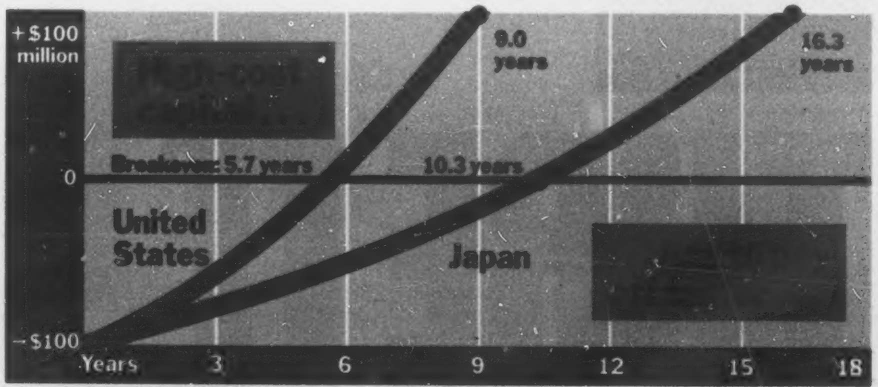
High capital costs hurt most at the cutting edge of technology. Experts who study the relationship between the producers of high-tech goods and their component suppliers liken it to a food chain. Components—semiconductors, for example—manufactured by one company find their way into, say, personal computers. A loss of competitiveness in the lower stages saps the vitality of more advanced industries that depend on their output. Says Alan McAdams, a professor at Cornell's business school: "The technology food chain is becoming dangerously eroded."

The plankton at the base of the chain is the omnipresent DRAM, the semiconductor memory chip used in products from digital wristwatches to supercomputers. Japanese chipmakers now control some 85% of the world memory market. U.S. chipmakers make a good case when they complain that Japanese dumping drove them out of business. But dumping only hastened the process. The big, vertically integrated Japanese companies were able to keep investing during the volatile chip industry's downturns, when smaller American firms cut back or dropped out of the business. Japan's cheaper money alone continues to give it a decisive edge in this hugely capital-intensive business. U.S. companies must depend on the equity markets to fund development and early manufacturing, while the Japanese can borrow at a quarter of the cost.

U.S. companies are aiming to get seriously back into the DRAM business by adapting part of the Japanese strategy. U.S. Memories, the joint venture underwritten by Intel, National Semiconductor, Advanced Micro Devices, LSI Logic, IBM, Digital Equipment Corp., and Hewlett-Packard, plans to raise $1 billion in capital—half in equity from the founding partners and others yet to be enlisted, and the rest in debt. The company hopes to start production by 1991.

With IBM, DEC, and H-P aboard both as patient co-investors and steady consumers of its output, the new company should face less business risk—hence, a somewhat lower cost of capital—than stand-alone chipmakers had in the past. But the Japanese will still get their funds a lot cheaper. The best hope for U.S. Memories is that producers and consumers will pay a premium to ensure the survival of this link in the domestic high-tech food chain.

Even when an erstwhile startup is growing vigorously and doing everything right, it can get tripped up by the high cost of capital. Western Digital of Irvine, California, began building computer equipment in 1970; today it makes some 300 different devices that store, move, and display data in personal computers and computer networks. With sales approaching $1 billion annually in an industry expected to nearly double over the next five years, CEO Roger Johnson must steadily increase R&D spending to protect his product line from encroachments by larger companies—many of them based you-know-where—that are eyeing the increasingly attractive market.



To earn a real annual after-tax return of 5.5%, a $100 million investment by a U.S. company must break even in just under six years. In Japan, where a 2.8% annual return suffices and corporate taxes and inflation are lower, the project need not break even for a decade.

Trying to outpace potential foreign rivals puts Johnson in a bind. As his product line expands, he is forced to invest across a broader front to defend his lead. This year Johnson plans to shell out some $130 million for new plant and equipment, plus $80 million for research, sums that are sure to spiral upward as Western Digital continues to grow.

Where to find the money? Johnson thinks borrowing is too risky because his products have such short life cycles that they may be obsolete before the debt is repaid. The stock market has been sour on technology stocks since the October 1987 crash, so a new equity offering would dilute Western Digital shares for too little new money. Johnson's only choice is to finance most investments internally. But typically he needs cash to bring a new family of technologies to market just as the old products are heading into their dotage and generating less and less revenue. Pitted against potential Japanese rivals, whose patient capital lets them invest steadily through technology life cycles, Johnson is fighting uphill. Western Digital must meet the required level of profitability in three years; its foreign rival can wait nine years.

All roads lead to the conclusion that higher capital costs result in a higher cost of doing business—one that no amount of ingenuity can overcome completely. How should the U.S. begin to close its capital gap?

Of the many schemes for raising the saving rate and otherwise leveling the capital playing field, three stand out:

■ **Phase in a consumption tax.** Long a favorite idea of economists, a broad-based consumption tax is the cornerstone for any serious effort to spur investment. It would boost saving both by trimming the budget deficit and by discouraging consumer spending. The tax might obviate the need for added saving incentives, such as allowing people to stash more money into tax-exempt individual retirement accounts. But if it didn't, the higher revenues it generated could help offset the costs of the incentives.

■ **Reduce the capital gains tax.** By raising the capital gains rate from 20% to 33%, the 1986 Tax Reform Act made an already sizable U.S. disadvantage worse. The Japanese government levies a tax of only 5% on realized capital gains. In West Germany gains on investments held six months are tax exempt. President Bush has proposed rolling back taxes on capital gains to 15%. Congress should rise above its "don't help the rich" grandstanding and go along. But it should limit the reduction only to investments held long enough—say three years—so that tax gambits will take a back seat to basic investment considerations.

■ **Equalize the tax treatment of debt and equity.** The 1986 Tax Reform Act raised the costs of equity financing by increasing the average corporate tax rate and leaving in place the double taxation of dividends. Since interest payments remain tax-deductible, companies have responded by swapping some $290 billion in equity—what in economic terms amounts to corporate savings—for debt over the past three years. That has still left them paying more for capital than they would have before tax reform.

The switch also turned much of that equity into spending money for consumers, according to two MIT economists, Paul R. Krugman and James M. Poterba, and George N. Hatsopoulos, chairman of the Boston Federal Reserve and also of Thermo Electron Corp. In a paper published last spring, the three concluded that the former shareholders who traded in stock saved just 50 cents of every dollar they netted.

At least two serious proposals for equalizing the burden are floating around. Krugman, Poterba, and Hatsopoulos would replace the current interest deduction with a credit equal to 5% of both equity and debt financings. Congress's Joint Committee on Taxation proposes allowing companies to deduct 60% of dividends and 60% of interest. Either method would be complicated to phase in, but should generate roughly the same tax revenue as the current system.

The ultimate goal should be to lift national savings to around 11% of GNP, the rate that would close the capital cost gap entirely. The tax changes proposed here would go a long way toward accomplishing that. At stake is nothing less than nation's ability to compete with the rest of the world. ■

HOW TO SPREAD POTOMAC FEVER

Corporate chiefs think government officials are forced to make unreasonable sacrifices. The CEOs' solution: higher pay and less scrutiny of personal lives.

■ *by Alan Deutschman*

CALL IT THE Beltway brain drain. A Federal Reserve governor quits to take a more lucrative job in private industry. Key technocrats eject from NASA. Leadership positions remain unfilled seven months into the Bush Administration. Is anyone out there taking notice?

Absolutely. The latest FORTUNE 500/CNN Moneyline CEO Poll shows that corporate bosses are distressed by the difficulty of attracting new talent to the Potomac and by the exodus of experts from those muggy shores. The issue hits close to home: Many CEOs have long harbored a sneaking ambition for a high-level job in government. But nowadays they wonder whether it's worth the sacrifice. When asked what change would best attract the ablest business people to Washington, 37% said eliminating the overzealous scrutiny of an appointee's personal life and finances, and 33% called for higher pay scales to compete more effectively with the private sector.

FORTUNE's poll was conducted by the independent opinion-research firm of Clark Martire & Bartolomeo. The respondents, 206 CEOs of FORTUNE 500 and Service 500 companies, were interviewed between July 10 and July 18. Shortly before the poll took place, President Bush called for pay increases of up to 25% for 7,900 senior officials in the executive branch. An overwhelming 94% of the CEOs approve.

"Compensation is the most important factor," says Lawrence Klamon, CEO of Fuqua Industries. "It is critical to attracting and keeping better people." His peers agree heartily. Fully 89% of the executives say pay for federal appointees is too low. Bush's recent pay-hike proposal, although much needed, is not nearly as generous as many CEOs would have liked. Some 85% say that lawmakers should have enacted an earlier plan for a 51% increase, lifting pay from $89,500 to $135,000 for Congressmen, Senators, and senior officials such as deputy Cabinet secretaries and chiefs of regulatory agencies.

The hitch with the earlier proposal came in linking the salary of, say, the head of the Food and Drug Administration to that of the legislators, who feared the wrath of constituents. After public outcry swelled, the House lost resolve and killed the pay-raise bill in February. "Because of Congress, others are suffering," says Klamon. "There ought to be a way to unbundle the payrolls. If Congress can't take the heat, we shouldn't penalize the judicial and executive branches."

"The process for choosing first-rate people is cumbersome and slow."

WILLIAM RUCKELSHAUS
Browning-Ferris

KATHERINE LAMBERT

The cap on compensation presses cruelly on the less visible layers beneath the top, says Klamon: "It puts pressure on the deputy assistant secretaries, who are younger, less affluent, and don't get the recognition. It's there, down the line, where so much of government policy is made." Klamon should know: He was on the staff of Secretary of Defense Robert McNamara in the early 1960s. Now, along with other corporate executives who once held positions in Washington, he lobbies for a higher quality of appointees as a member of

Q Over the past ten years, has the quality of high-level federal appointees increased, decreased, or stayed about the same?

A

Increased	24%
Decreased	25%
The same	50%
Not sure	1%

Q Is pay for federal appointees too high, too low, or about right?

A

Too high	0%
Too low	89%
About right	8%
Not sure	3%

Q This year a proposal to raise the pay of Senators, Congressmen, and senior civil servants by 51%, to $135,000 a year, was defeated. Should it have been enacted?

A

Yes	85%
No	15%

Q A few days ago, President Bush proposed a pay increase for top officials in the executive branch of the federal government. Do you approve of this proposal?

A

Yes	94%
No	2%
Not sure	4%

the Washington-based Council for Excellence in Government.

Making compensation more competitive is vital, too, if we are to hold on to good career civil servants, the CEOs say. "We're losing very good people in the government over the question of pay," says William Ruckelshaus, who led the Environmental Protection Agency in two Administrations and currently serves as CEO of Browning-Ferris Industries.

Income is rarely a constraint for the CEO who quits at age 62 for a second career in the capital. He has made his pile by then. But for younger managerial talents, the opportunity costs can be prohibitive. Says Rand Araskog, CEO of ITT: "When people leave top executive positions, they're usually ready for retirement. It's easy to get a lawyer or consultant to go to Washington"—he can make a name for himself there—"but without correcting the pay and incentives it's hard to attract a CEO who's in mid-career."

Araskog argues that corporate executives who have already restructured their own bureaucracies are just the right people to run big federal organizations. But too often, he says, they're not the ones asked to serve. Araskog criticizes President Bush for picking senior officials through a spoils system, thereby failing to tap top-caliber outsiders: "Appointments depend so much on political pull and campaign obligations. It's a sick situation in Washington today, and I think it has gotten worse. Bush has done so little compared to what he said he would do. He has violated his campaign promises on appointments, and I'm disappointed."

"Appointments depend so much on political pull and campaign obligations. It's a sick situation."

RAND ARASKOG
ITT

ANDY FREEBERG

Even if CEOs were called to duty, many claim they would shrink from subjecting their personal lives and finances to intense public scrutiny. A majority (53%) said the financial disclosure requirements for appointees are "too strict." Says Maurice Greenberg, CEO of American International Group: "The disclosure rules have become so bizarre that many good people are turned off. They don't want to go through a total baring of their soul, even though they don't have anything to hide. Why do you have to put every facet of your life on public display?" Business bosses are also irked by restrictions circumscribing what you can do after you serve, particularly the rules put in place recently. Says Harry Todd, CEO of Rohr Industries, which does one-third of its business with the government: "You can't do a bloody thing for a couple of years after leaving. What are these people supposed to do, go fishing?"

Q **How would you describe requirements for federal appointees, including financial disclosure rules and post-employment restrictions?**

A

Too strict	**53%**
Too lax	**7%**
About right	**38%**
Not sure	**2%**

Q **What changes in federal rules would most attract talented business people to government service?**

A

Reduce public disclosures	**37%**
Increase pay	**33%**
Improve ability to return to area of expertise afterwards	**9%**
Relax rules on divestiture of personal investments	**9%**

Although most CEOs recognize the need for some rules to prevent conflicts of interest, they think the ethics mania has gone too far. "It's difficult to find enough Sir Galahads who are willing to serve in government," says Alexander Giacco of Himont Inc. W. W. Sprague, CEO of Savannah Foods & Industries, agrees: "The Mr. Clean questionnaires are unrealistic."

Respondents were particularly fearful of the daggers lurking on Capitol Hill. Many cited what Supreme Court nominee Robert Bork went through as a cautionary example. "Congress feels immune from the restraints against unfair attack and character assassination that ward off the best of men," says Robert G. Reed III of Pacific Resources. Adds Allen Jacobson of 3M: "We must eliminate the very political approach the Senate takes to giving its advice and consent."

Even for candidates who aren't particularly controversial, the nomination and confirmation process can seem a big drag. "The process for choosing first-rate people is cumbersome and slow," says Ruckelshaus. When he returned to the beleaguered EPA in 1983, he demanded authority to circumvent the usual procedures and pick his own lieutenants, subject only to President Reagan's final approval. He swiftly chose 12 appointees, who then were cleared by Congress without a single dissenting vote. Time elapsed: 45 days. Ruckelshaus recalls, "The President sent a clear signal. Barring a Karl Marx, these people would be approved."

CEOs recoil from government jobs for other reasons besides pay and disclosure. Some say they're most discouraged by the monumental effort needed to produce real change in Washington. Others are put off by the persistent stench of past scandals. Says Martin Walker, CEO of M.A. Hanna Co., a manufacturer of specialty chemicals: "I've thought many times about taking a government post, but my interest has been diminished by the inordinate number of bad appointments under Reagan and Carter. I can handle the loss of salary, but I wouldn't want to be a laughingstock, taking a position that has been demeaned."

"Because of Congress, others are suffering. There ought to be a way to unbundle the payrolls."

LAWRENCE KLAMON
Fuqua Industries

BOB NELSON—PICTURE GROUP

John T. Morgan, CEO of American Savings Bank, agrees: "Serving in Washington is like being in the military after the Vietnam war. It is *not* an honor, and that's too bad." Before joining the private sector, Morgan spent ten years at the State Department and two as a bank regulator. How, he asks, can we "restore the sense of importance—of *grandeur*" that public service once had? Maybe you start with little things, like a little respect for the intelligence and character of the nominees during the confirmation process. Spirals lead up as well as down. ■

FRIEDMAN ON DRUGS

Milton Friedman's contention that we should legalize drugs ("Stars of the 1980s Cast Their Light," July 3) is irresponsible and dangerous. Everyone's life is threatened by the plentiful presence of drugs. Friedman's motive is to free the police force to protect us "from theft and crime." But many criminals are substance abusers. We could similarly free the police to concentrate on crimes against property by legalizing murder and rape.

ANDRIUS SULSKIS
Saint Charles, Illinois

THE JAPAN FUND

We were pleased that you mentioned the Japan Fund in "Tokyo's Bull Has Further to Run" (Personal Investing, July 3). However, I would like to point out that the fund is now a pure no-load, open-end mutual fund, not a closed-end fund as you said.

DAVIA B. TEMIN
Vice President, Scudder Stevens & Clark
New York City

NEW ZEALAND'S INFLATION

"Are We Too Scared of Inflation" (June 19) cited New Zealand as having an inflation rate of 12.7%. Actually our inflation rate has declined to 4%. We haven't had double-digit inflation for over a year. After all the pain of the past few years, I would hate to think that Americans believed that New Zealanders can't get their act together.

RICHARD FINNY
Public Relations Manager
Sheraton Auckland Hotel
Auckland, New Zealand

MICHIGAN'S GOVERNOR

"A Business Guide to Bush Country" (July 17) contains an error many of us in Michigan only wish were true: The guy on the right in the picture with the caption "Republican governors . . . watch . . . President Bush" is James Blanchard, Michigan's Democratic governor.

DAVID C. YATES
Yates & Co., Financial Consultants
Grosse Pointe Farms, Michigan

HOW CLEAN IS ENOUGH?

Anyone who puts a price on the environment as you have done in "Air: How Clean Is Clean Enough?" (July 17) should visit those UCLA doctors to see whether all that ozone is clouding their thinking. As a scientist, I know all too well that research progresses at a snail's pace. Why do we need "proof" when further reduction of pollutants can only benefit us? Certainly cost is an important consideration, but what will man do when the last forest is cleared and the last lake is poisoned? Will he eat his money?

ADAM Z. GILESKI
Princeton, New Jersey

CORRECTION

"America's 50 Biggest Exporters" (July 17) misstated Eastman Kodak's 1988 export sales figure; it was $2,771 billion, not $2,301 billion. The change does not affect Kodak's rank. ■

Address letters to FORTUNE, Time & Life Building, Rockefeller Center, New York, N.Y. 10020. Letters may be edited for purposes of clarity or space.

our time.

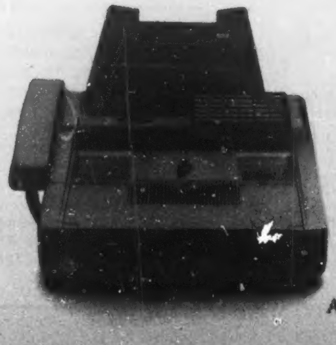
And with Canon's exclusive UHQ image processing system, the FAX-705 can reproduce images with such clarity and detail you may have trouble telling the fax from the original.

So if your high-performance fax doesn't really offer the performance you need, see the FAX-705 at your Authorized Canon Facsimile Dealer. Or call 1-800-OK-CANON.

Why wait around any longer?

UHQ™
IMAGE PROCESSING SYSTEM

*Standard mode.



Canon
FAX-705
COMMUNICATING QUALITY

Enjoy easy extended payments with the Canon Credit Card. Ask for details at participating Canon dealers and retailers. Available only in U.S. © 1989 Canon U.S.A., Inc.

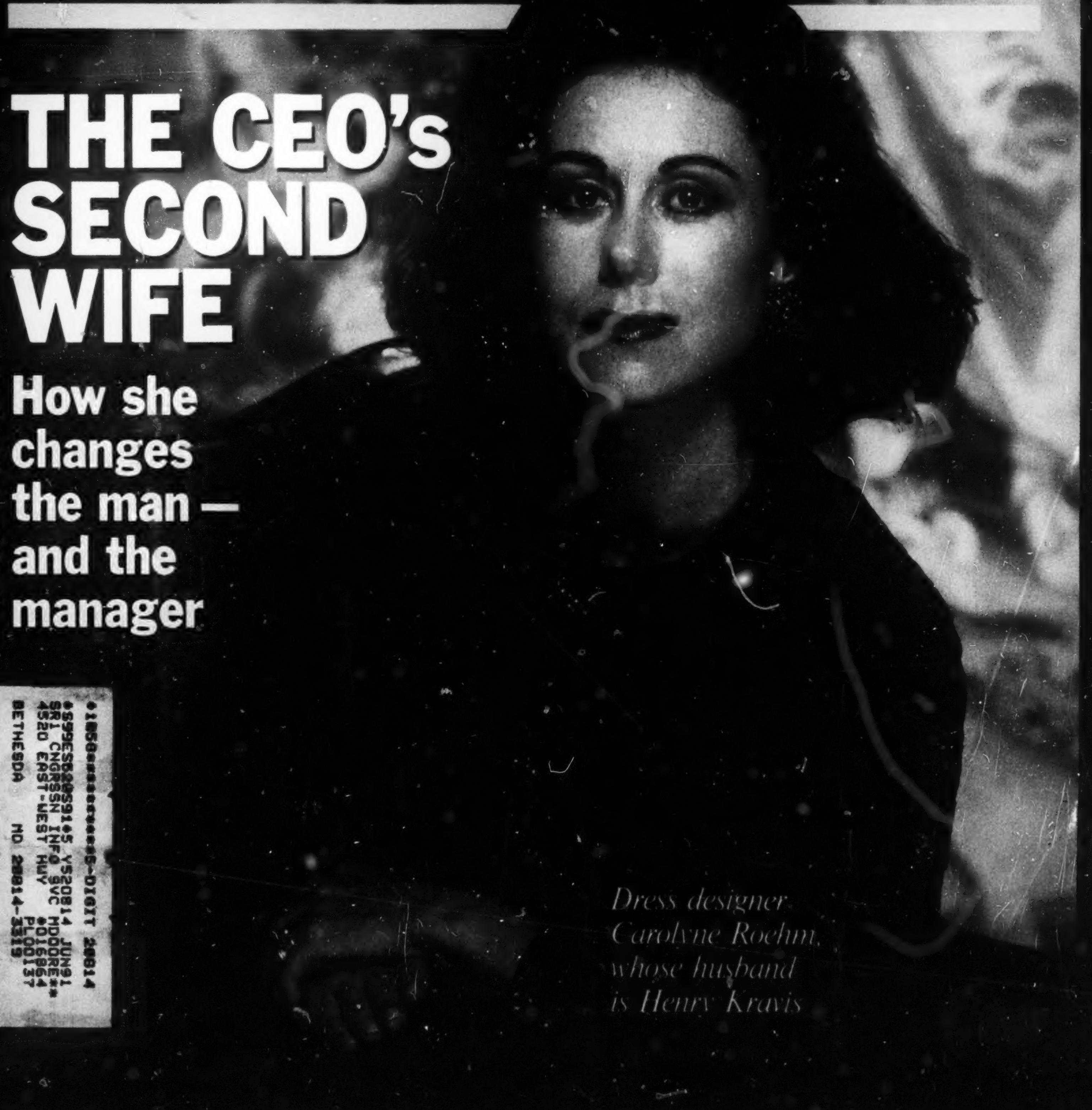
■ MCDONNELL DOUGLAS • GEORGE GILDER ON WEALTH • WHO RUNS JAPAN

C8960-1

AUGUST 28, 1989

$3.50

FORTUNE



THE CEO's SECOND WIFE

How she changes the man — and the manager

#1858********5-DIGIT 20814
#599ESB205S91#5 Y520814 JUN91
SR1 CNGRSSN INFO SVC MD00RE**
4520 EAST-WEST HWY *D016864
PL00137
BETHESDA MD 20814-3319

Dress designer Carolyne Roehm, whose husband is Henry Kravis

AUGUST 28, 1989

FORTUNE

"I see really happy people. They've corrected for past mistakes." PAGE 52

ABOVE: Nancy and Norman Brinker were photographed at their Twin Mallets Ranch in Texas by Theo Westenberger/ Sygma.

COVER: Theo Westenberger/ Sygma photographed Carolyne Roehm in front of a 17th-century Flemish tapestry in the Trustees' Room at the New York Public Library.

EXECUTIVE LIFE/Cover Story

THE CEO'S SECOND WIFE 52

Yes, she's typically younger than the first, and she's different in other ways. Often she has a substantial career. At the same time, she's a showpiece: beautiful, slim, and sometimes taller than her husband. But her primary job is remaking his life. The change he undergoes in her hands may even result in his becoming a more considerate manager. *by Julie Connelly*

REMARRIED EXECS AND CURRENT SPOUSES 57

CAROLYNE ROEHM MAKES HER OWN CLOTHES 60

MANAGING

HOW TO GO GLOBAL—AND WHY 70

Why? To survive. Domestic markets have become too small for even the biggest companies in the biggest countries if they are in transnational industries. How to do it? Look at the whole world as one market. Buy, borrow, hire, and manufacture wherever you can do it best. And get some local allies. *by Jeremy Main*

YOUR GLOBAL CHECKLIST 76

CORPORATE PERFORMANCE

BUMPY FLIGHT AT MCDONNELL DOUGLAS 79

Even before two DC-10 crashes, it was beset by defense cutbacks and factory foul-ups. Now managers must unsnarl a new reorganization and win over its often restive blue-collar workers to start climbing again. *by Ronald Henkoff*

COMPANIES TO WATCH 83

M.A. Hanna is the ultimate in restructuring. An old-fashioned mining company is now a thriving chemicals producer. *by Monci Jo Williams*

Also: Banta Corp., Crompton & Knowles, Shopsmith, and EFI Electronics.

TECHNOLOGY

TRASHING A $150 BILLION BUSINESS 90

It's plastics. Sooner or later the stuff turns into the kind of garbage that takes eons to degrade. Manufacturers ignored the solid-waste crisis, and now they face bans that could be hard on them—and their customers, who include just about everybody. *by Stratford P. Sherman*

VOL. 120, NO. 5

"We're going to have a bear market . . . I expect a drop of 20% in the U.S. market."

PAGE 41

If an English boss says, "Perhaps you ought to think about this a little more," what he means is "You must be mad."

PAGE 70

"From all I've seen, there's been nothing to shake my confidence in the DC-10."

PAGE 79

"Plastic is forcing us to take responsibility for the way we live!"

PAGE 90

"In Britain the mobile phone retailing is much more aggressive than in the U.S."

PAGE 107

"A Socialist government in Japan? The chances are zero."

PAGE 113

COMPENSATION

INCENTIVE PAY THAT DOESN'T WORK 101

Restricted stock is supposed to spur executives to improve their companies' performance. The author's study shows you can bet it won't because as a group, companies that grant these shares are underachievers. *by Graef S. Crystal*

COMPETITION

EUROPE GOES ON A TELEPHONE BINGE 107

Rushing to build modern voice and data networks for 1992, it is shaping up as the world's fastest-growing market in switching gear, mobile phones, and data transmission. The future looks dazzling for providers of everything from digital switches to electronic mail, and a host of U.S. companies are poised to profit. *by Shawn Tully*

THE WORLD

WHO RUNS JAPAN? 113

Answer: the bureaucrats. They're reliable, pro-business, and well entrenched. So don't worry too much that the Socialists just scored a big electoral victory over the Liberal Democrats. Their impact on the nation will be limited. *by Carla Rapoport*

FORTUNE BOOK EXCERPT

THE WORLD'S NEXT SOURCE OF WEALTH 116

We all think we know about the computer revolution, but not many of us understand how it happened. A new book by the controversial author of *Wealth and Poverty* (1981) examines the forces that created this upheaval and explains how they will powerfully change business, trade, and national influence. *by George Gilder*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 8

NEWS/TRENDS 14

The worrisome shortage of airline mechanics, whither capital gains, AT&T gets the go-ahead for electronic publishing, and more.

FORTUNE FORECAST 23

The economy's underlying strength will get it past the summer doldrums. *by Vivian Brownstein*

PERSONAL INVESTING 41

The right kind of REITs deliver high yields without your betting the ranch. *by Ellen Schultz*

Also: Tandem Computers moves out of the technology stock trough, five mutual funds with first-rate managers, and Portfolio Talk with stock market strategist Barton Biggs.

FORTUNE PEOPLE 122

Bob Baldwin's return to investment banking, David Stern's full-court success, Ralph Ingersoll's *Sun* also rises, and more. *by Mark Alpert*

OTHER VOICES 125

The notion that directors owe shareholders maximum value in the short term is wrongheaded, argues commercial banker Peter Róna.

BOOKS & IDEAS 127

Two new books on E.F. Hutton tell a morbidly fascinating story about the demise of a giant Wall Street firm. *by Irwin Ross*

LETTERS TO FORTUNE 131

KEEPING UP *by Daniel Seligman* 135

EDITOR-IN-CHIEF Jason McManus
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, John J. Curran, Marta F. Dorion, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Colin Leinster, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Bill Saporito, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Alan Farnham, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, CA), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Robert E. Norton (Washington), Peter Nulty, Brian O'Reilly, Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Lenore Schiff, Brenton R. Schlender (San Francisco), Patricia Sellers, Andrew Evan Serwer, Thomas A. Stewart, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo), Richard S. Teitelbaum
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Charles J. Attardi, Leslie Brenner, Jonathan Brown, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Simone M. Kilian, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, David V. Rile, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CONSUMER MARKETING DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dueller

EDITOR'S DESK

ANDY FREEBERG

Cover writer Connelly examines business sociology.

WHAT IN THE WORLD is FORTUNE doing writing about second wives of CEOs? Henry Luce, who knew something about the subject, started us on this course in 1930 with the very first issue of FORTUNE, which pioneered in reporting on business sociology. Ever since then our magazine has examined, among many other subjects, how managers' personal lives intertwine with their careers. Assistant managing editor Walter Kiechel, who edited "The CEO's Second Wife," says, "This story recounts in Proustian detail how the lives of people at the top have changed and tells us something about what they are thinking."

The writer of our cover story, senior editor Julie Connelly, is a veteran of *Time*, *Money*, and *Institutional Investor* magazines who is expert in high finance and fascinated by high society. She follows in the FORTUNE tradition of William H. Whyte, author of a 1951 article titled "The Wives of Management" and of a series of stories for our magazine that turned into the classic best-seller *The Organization Man*.

Connelly had the idea for the story in this issue when she noticed that a lot has changed since Whyte's day. For one, divorce used to finish a career. No longer. More CEOs are remarrying today than ever before. Reporter Darienne Dennis, who worked with Connelly on the story, compiled a table of them. I think you'll find some of the names interesting.

To find out about these marriages, Connelly and Dennis interviewed the wives—as well as first spouses, psychologists, and various academic experts—for hours on end. Applying her networking skills, Connelly would get help from one wife to reach the next and the next. A small world, it turns out. She visited a few at what she describes as "some of the most beautiful homes in the country," complete with elegant antiques, winding staircases, and soaring ceilings. All the women were eager to talk about their husbands—and themselves.

Perhaps you'll find most intriguing the effect they have on their men and their jobs. Many of the wives are a decade or two younger than their husbands, sometimes several inches taller, beautiful, and very often accomplished. Some try to create the "right" circle of friends by toting their mate to small dinner parties, opera galas, and museum benefits. Some provide moral support for his work. And still others, especially those in their 30s, make the 50- and 60-year-old CEOs feel they can compete sexually with younger men, the kind of ego boost that doesn't hurt when going up against young turks at the office.

Who are these women? What do they have to say? How do they relate to their husband's children? How are they changing their husbands as managers? For answers, see page 52.

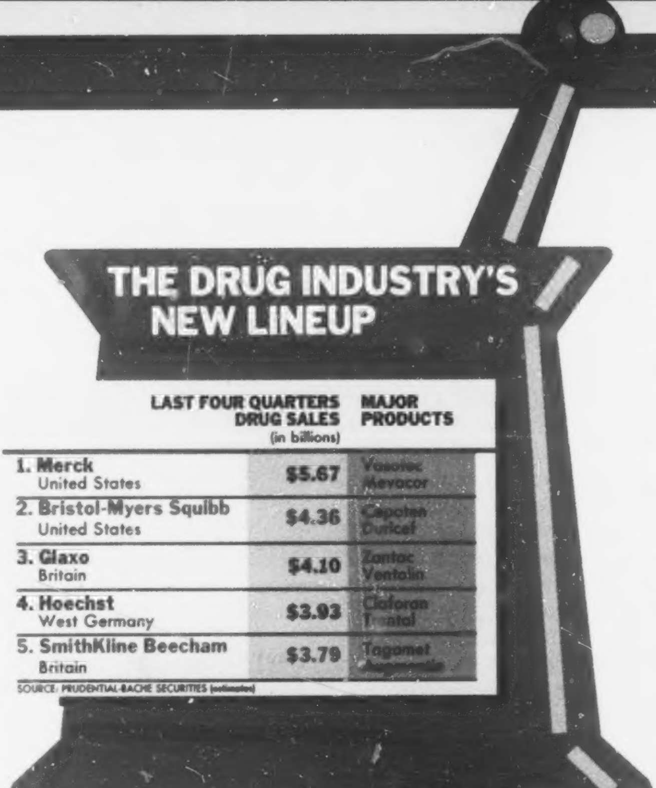
Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President; Joseph A. Ripp, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, Fla. 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-541-1000. © 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company. **For subscription queries, call Customer Service at 1-800-541-1000.**

vices Group (310,000 subscribers), which sells financial information, **Mead** (210,000 subscribers), a research-oriented database service, and **Prodigy** (50,000 households), a joint venture of **Sears** and **IBM** that provides home shopping.

Cost has been an obstacle to popularity: from $12.50 an hour for CompuServe to $150 to $300 an hour for **Mead**'s Lexis and Nexis. AT&T could spread billing, marketing, and mailing costs, and help offer the cheap service that would attract a bigger consumer market.

The Goliath admits it needs help. AT&T says its strength is technology. The company concedes a lack of expertise in collecting and collating information and is shopping around for partners in electronic publishing. "The mind-set needed is totally different," says Esther Dyson, editor of *Release 1.0*, a computer industry newsletter. "For AT&T, it's like trying to sell Perrier after being a water utility." **– Rahul Jacob**



THE DRUG INDUSTRY'S NEW LINEUP

	LAST FOUR QUARTERS DRUG SALES (in billions)	MAJOR PRODUCTS
1. **Merck** United States	$5.67	Vasotec Mevacor
2. **Bristol-Myers Squibb** United States	$4.36	Capoten Duricef
3. **Glaxo** Britain	$4.10	Zantac Ventolin
4. **Hoechst** West Germany	$3.93	Claforan Trental
5. **SmithKline Beecham** Britain	$3.79	Tagamet Augmentin

SOURCE: PRUDENTIAL-BACHE SECURITIES (estimates)

WEDDING BELLS

■ The usually sedate pharmaceuticals industry will remember the summer of 1989 for its flings and nuptials. The latest betrothal: the planned $11.5 billion merger of **Bristol-Myers** and **Squibb**. This has Wall Street twittering about who else may be headed for the altar. Indeed, wedding bells have barely stopped pealing for the marriages of **Marion Laboratories** and **Dow Chemical**, and of **SmithKline Beckman** and **Beecham Group**. Now speculators are pushing up prices for shares of the remaining industry eligibles, including **Pfizer**, **Rorer Group**, **Schering-Plough**, **Upjohn**, and **Warner-Lambert**.

Is bigger really better in the pharmaceuticals industry? Most definitely, say Richard L. Gelb, CEO of Bristol-Myers, and Richard M. Furlaud, CEO of Squibb. The merger will create the world's second-largest drug firm, with 1988 sales of $8.6 billion and drug revenues of $4.2 billion. **Merck** is No. 1 (see table). "We will have the critical mass we need to compete successfully in a global environment," says Gelb, who will head Bristol-Myers Squibb. (For more on the global imperative, see Managing.)

Gelb and Furlaud tie the knot.

The two executives claim that the new company will leverage Squibb's widely respected research and development operations. For example, instead of licensing a new drug to foreign competitors, Squibb can use Bristol-Myers's financial and marketing prowess to sell it worldwide. The merger also joins Gelb, 65, and Furlaud, 66, who have known each other since their daughters attended prep school together in New York City.

Despite these advantages—and Wall Street's salacious hopes for couplings of any sort—the summer of '89 may also see the end of drug industry romances. Reason: The deals are too expensive. Says Neil Sweig, a drug industry analyst at Prudential-Bache Securities: "Bristol-Myers is paying a price almost beyond belief for Squibb. I think Gelb, before he retires, wanted to vault his company into the ranks of the major pharmaceuticals houses by making a bold move. He let Squibb write its own ticket, and they wrote a beauty." Sweig values the $11.5 billion stock swap at 4.5 times Squibb's annual sales, eight times book value, and 26 times annual earnings—pricey by any industry's standards. **– Stuart Gannes**

BOCCE À LA MODE

■ Not long ago the game of bocce brought to mind images of elderly men smoking Tuscano cigars. It was about as glamorous as, say, shuffleboard. Now a younger set of devotees swear that bocce (pronounced BOTCH-ee), a cross between billiards and lawn bowling, will surpass golf as an American sport of the 1990s.

The U.S. Bocce Federation estimates that 100,000 Americans are doing it. Californians even play it on the beach. "The beach!" sniffs veteran Paul Montrone, CEO of **Wheelabrator Technologies**, a waste-to-energy company. "I guess we'll have to be open-minded."

Open-minded he is. For the first time, Montrone has invited a few friends of non-Italian extraction to play in this month's fourth annual Wolfeboro Invitational Bocce Tournament in New Hampshire. Among the newcomers: Sam Zell, chairman of **Equity Financial & Management Co.**; Ira Stepanian, chairman of **First National Bank of Boston**; and John Silber, president of Boston University. To get them in the mood, Montrone provided a complimentary copy of *How to Be an Italian.* **– J.L.**

Montrone (right) and friend

OHN NORDELL—JB PICTURES

BUMPY FLIGHT AT MCDONNELL DOUGLAS

Even before two DC-10 crashes, it was beset by defense cutbacks and factory foul-ups. Now managers must unsnarl a new reorganization to get airborne again. ■ *by Ronald Henkoff*

CHRIS SORENSEN

The 325-seat MD-11, the successor to the DC-10, is due to take off in autumn 1990.

ONCE AGAIN bad news has jolted McDonnell Douglas. Often enmeshed in controversy and scandal in the 1970s and 1980s, the $15-billion-a-year aerospace manufacturer must now contend with two fatal accidents, half a world apart, involving its DC-10 airplanes. The first was in Sioux City, Iowa, where 111 people died in a United Airlines crash. Seven days later another 88 people were killed when a fog-encircled Korean Air DC-10 missed the runway in Tripoli, Libya. If investigators determine that design flaws contributed to either accident, it could seriously undermine the already precarious recovery of the company's commercial airplane business.

Publicly, McDonnell Douglas officials express full faith in the DC-10, which has been involved in three other well-publicized crashes in the past 15 years. "From all I've seen, there's been nothing to shake my confidence in the DC-10," CEO John McDonnell told FORTUNE in his first interview since the accidents. After 18 years the company is replacing the DC-10 with a new model and delivered the last one to Nigeria Airways in July.

Even if its plane gets a clean bill of health, McDonnell Douglas has plenty of tough flying ahead. As the nation's largest military supplier ($8 billion in contracts last year), it historically gets two-thirds of its sales from the government. It is already seeing aircraft programs trimmed away by Pentagon budget cutters, and more reductions are on the runway. Production schedules for all four of its major fighter planes may be stretched out beyond their normal spans, putting a brake on profit margins. Defense Secretary Dick Cheney wants to stop two other programs after fiscal year 1991, the F-15 Eagle attack plane and the Army's AH-64 Apache helicopter, wiping out $5.2 billion in revenues for the company and its subcontractors.

Worse, production bottlenecks and a jarring reorganization are causing losses in its commercial airliner business. Thanks to aggressive salesmanship and a worldwide updraft in air travel, the company's backlog of airplane orders is at an all-time high. But its Douglas Aircraft division, which also makes military cargo planes, has been unable to ramp up production to meet demand. It reported operating losses of $224 million in the first half of this year.

CEO McDonnell, 51, is convinced that he can put the family-run firm back on course. "Our goal," he asserts, "is to produce higher-quality products at lower cost." That may seem like an obvious objective, but it is a new tack for an organization where sales have long dominated manufacturing. McDonnell, a detail-minded manager who sports a neatly trimmed beard, is the son of James S. McDonnell, the legendary "Mr. Mac," who founded the company in 1939 and ran it until his death at 81 in 1980. McDonnell became the top officer at the St. Louis–based company after his cousin, Sanford, retired last year.

McDonnell Douglas reported a loss overall of $58 million in the first six months of 1989, excluding a one-time gain of $179 million from an accounting standard change. Cost overruns in airliner production are largely to blame, but the company has also stumbled trying to diversify into less cyclical businesses. Last month it said it would sell off a big chunk of its information

REPORTER ASSOCIATE *Rosalind Klein Berlin*

services unit to British Telecom, thereby abandoning hopes of becoming a major player in that field.

The losses come at a bad time. McDonnell Douglas has increased its debt load 41% in the past 18 months to $2.3 billion, partly to finance the manufacture of its new 325-passenger wide-body jet, the MD-11. The plane, essentially a modernized version of the DC-10, won't be delivered to customers—and therefore won't begin generating revenues—until the autumn of 1990, some three months behind schedule. If the Federal Aviation Administration orders design changes in the MD-11 after the Sioux City crash, certification could be delayed, putting an even greater strain on profits.

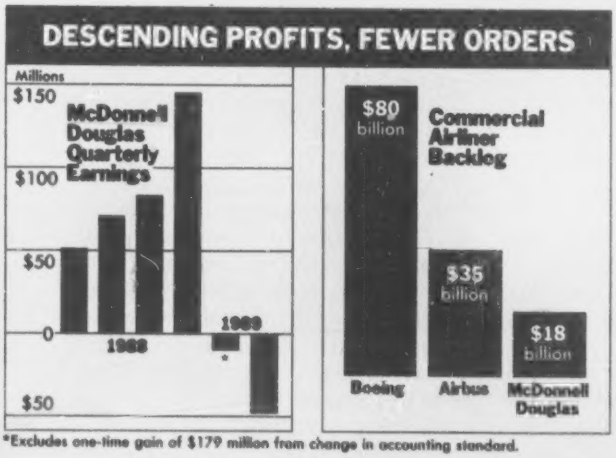
ALAN DOROW

McDonnell promises a brisk turnaround.

Despite its success as a defense contractor, McDonnell Douglas has been bedeviled by the commercial aviation business ever since it took over failing Douglas Aircraft Co. in 1967. During the late 1970s and early 1980s it lost buckets of money as it grappled with stronger competitors and the effects of a DC-10 crash in Chicago in 1979 that killed 273 people, still the worst U.S. aviation disaster. McDonnell Douglas considered getting out of the business in the early 1980s. In 1983, however, James Worsham, a supersalesman who headed the Douglas division, persuaded American Airlines to lease 20 MD-80s on a trial basis. American liked the planes but was especially fond of the bargain-basement terms Worsham offered. The following year American bought 67 more of the 150-passenger aircraft, and McDonnell was back in business to stay—albeit at a cost. According to Phil Friedman, a Drexel Burnham Lambert analyst, low-ball pricing tactics have helped produce cumulative losses of $200 million in the past decade.

Though it still lags behind competitors Boeing and Airbus (see chart), today the Douglas division has a record order backlog of $18 billion. The 401 firm orders for the MD-80 are enough to make the production lines at the Douglas plant in Long Beach, California, hum well into 1993. Another 518 options, if exercised, would keep the work force occupied almost to the end of the century. The company has also logged 95 firm orders and 220 options for the MD-11, the new wide-body. Revenues at Douglas could balloon from $4.9 billion in 1988 to an estimated $10 billion in 1991.

DESCENDING PROFITS, FEWER ORDERS



*Excludes one-time gain of $179 million from change in accounting standard.

But after its long famine, Douglas has trouble coping with the feast. "That was probably a more ambitious growth program than they should have committed themselves to," says Paul Nisbet, an aerospace analyst at Prudential-Bache Securities. After a hiring spree between 1984 and 1988 that more than doubled employment to 44,000, Douglas is handicapped by inexperienced workers who require costly training programs. Initial quality has slipped, forcing expensive and time-consuming repair work. Outside suppliers cannot keep pace with increased orders, and Douglas cannot even build enough of its own parts to meet demand. So tangled are the assembly lines that Douglas lost money building the ten-year-old MD-80 in the first half of 1989.

Chairman McDonnell insists the factory problems can be fixed. "Our solution," he explains, "is to change the way we do things." He's not kidding. In January, McDonnell appointed Robert Hood, whose forte is manufacturing, to replace the retiring Worsham. Next, the company introduced a sweeping reorganization plan called the Total Quality Management System. It scraps the old functional setup in which engineers worked on several different classes of aircraft and replaces it with a product-oriented system that allows them to focus on a single plane. Every one of Douglas's 5,000 managerial and supervisory positions was eliminated. The former occupants of those jobs can apply for just 2,800 newly created posts. The 2,200 who lose out will be stripped of their line managerial responsibilities. Most will be put to work as technicians on Japanese-style manufacturing teams both in design offices and on the production lines.

McDonnell hopes the reorganization will improve communication, cut bureaucracy, and put an end to what he calls "finger pointing and frustration caused by a lack of authority and accountability." Maybe so, but the execution was clumsy. "They've created chaos," complains Richard Shevell, a former senior engineer at Douglas who is professor emeritus of aeronautics at Stanford. "These kinds of business managers don't care about design or about the wonders of air transport. All they care about is organizational charts." McDonnell Douglas concedes that TQMS has cost more money than it has saved so far.

THE COMPANY also has to win over its often restive blue-collar workers, represented by the machinists and the auto workers unions, who remain suspicious of the managers' talk about teamwork and expanded worker responsibilities. Opposition is especially stiff at the missile systems operations in St. Louis where TQMS has just been introduced. "They've been kicking us in the butt, and now they want to kiss us on the jaw," says Cassell Williams, president of the 12,000-member District 837 of the International Association of Machinists. "They've got to build our trust first before we take them seriously."

By now, McDonnell Douglas is well experienced in coping with crashes, labor problems, and government cutbacks. To date, it has shown an admirable ability for surviving its problems, if not necessarily solving them. The company's current challenge is to sustain its profitable defense business while proving that it can produce and deliver commercial airliners as efficiently as it can sell them. ■

INCENTIVE PAY THAT DOESN'T WORK

Restricted stock is supposed to spur executives to improve their companies' performance. The author's study shows you can make money betting it won't.

■ *by Graef S. Crystal*

PSST, BUDDY, want a hot tip on the stock market? Well, whenever a company adopts a restricted-stock plan for its executives, you get out of that stock fast and invest in some other company that doesn't grant restricted stock. You may not make a killing in a single year, but over the long run you're almost sure to beat the market averages.

That advice emerges from a study I recently conducted of 161 major U.S. corporations. These were the companies I analyzed for this magazine's annual survey of CEO compensation (June 5), a group that comprised the top 100 from both the FORTUNE 500 and FORTUNE Service 500, minus companies with negative net worths, foreign corporate owners, or CEOs who served less than a year. Of these 161 companies, 61 grant restricted stock to their CEOs (and probably to other executives too). The remaining 100 do not. In general, the companies that grant restricted stock perform worse than the others, not only in return to shareholders but by a whole range of other measures as well.

What *is* restricted stock, and why should it be important to investors and not just specialists in executive compensation? To answer that question, let's go back to the 1950s and 1960s, when it was the rare company that used anything other than stock options as long-term incentive compensation. Under a classic stock option grant, the executive received the right, but not the obligation, to buy the company's stock during a ten-year period. The price he was required to pay on exercise of the option (the strike price) was the market value of a share on the day the option was granted. Obviously, if the price rose above that level, he could exercise his option and sell the shares for an immediate and risk-free gain.

Stock options offer at least some linkage between company performance and executive reward. After all, the executive doesn't make a nickel unless the stock price improves after the grant of his options. On the other hand, Warren Buffett, keen investor that he is, has observed that executives and shareholders part company when the market declines. The shareholders suffer a fall in the value of stock they bought with real money, while the executive walks away unharmed. That argument is perhaps a bit

GRAEF S. CRYSTAL *spent 18 years with a leading compensation consulting firm. Widely considered that industry's dean, he is now a professor at the University of California's Haas School of Business.*

REPORTER ASSOCIATE *Richard S. Teitelbaum*

ILLUSTRATION BY JOSH GOSFIELD

overdrawn, since the executive does sustain an opportunity loss. But then, an opportunity loss is the same as a real loss only to an economist, and not to the rest of us.

Options may sound pretty good to an executive, but what if the only place his company could compete were for best-of-breed at the local kennel club? What if his company's performance were so leaden that getting its stock price aloft would be like trying to fly the Spruce Goose? Forget about granting stock options, because they are literally not worth the paper they're printed on. But restricted stock—ah, now that looks like the ticket.

WITH RESTRICTED STOCK, the effective strike price is conveniently reduced all the way to zero: The company simply gives the executive the shares with the restriction that he may not sell them for a specified period, generally five years. In the meantime, he gets the dividends and can vote the shares. (Some companies use slight variations, for example offering equivalent sums of cash without issuing actual shares; I considered these the same as restricted stock.) Hence, he no longer has to lie awake nights trying to invent yet another strategy for increasing shareholder returns. To be sure, his stock may be worth more if he does. But even if he doesn't, he can still cash in. Unless he's a real worrywart and gets insomnia over the possibility that his company will go belly up, he can't lose with restricted stock.

Not every company that adopts a restricted stock program is a lousy performer. Witness Paramount Communications and Coca-Cola. Both grant restricted stock to their CEOs, and both have produced superior shareholder returns. But these are exceptions to an overwhelming trend.

For proof, check the table, which shows how the restricted-stock companies in this group underperformed the others. They returned less to shareholders and scored worse in several other important categories, including return on equity and return on assets. Data given are for the past five years, but the time period isn't critical. Look at sales growth or total return to investors for the past three years or the past ten, and the same story comes through: This group is a loser.

THE REAL PRICE OF RESTRICTED STOCK

Companies that award it trailed the rest over five years by these percentages:

Total return to investors	**−16%**
Sales growth rate	**−32%**
Net profit margin	**−18%**
Cash flow margin	**−15%**
Return on average equity	**−28%**
Return on average investment	**−23%**
Return on average assets	**−27%**
Growth in return on average equity	**−11%**
Growth in return on average investment	**−15%**
Growth in return on average assets	**−16%**

These are results from a study of 161 companies from the FORTUNE 500 and Service 500. An even 100 don't grant restricted stock; the rest, listed below, do.

COMPANIES STUDIED THAT USE RESTRICTED STOCK

Abbott Laboratories
Allied-Signal
AMR
Atlantic Richfield
Avnet
Bally Manufacturing
BankAmerica
Bankers Trust New York
Baxter International
Bethlehem Steel
Castle & Cooke
Champion International
Chemical Banking
Chevron
Chrysler
Citicorp
Coca-Cola
Colgate-Palmolive
Dow Chemical
Dun & Bradstreet
First Interstate
Fluor
General Dynamics
General Mills
Georgia-Pacific
Greyhound
Halliburton
Hewlett-Packard
Hospital Corp. of America
IBM
ITT
J.C. Penney
J.P. Morgan
Johnson & Johnson
Kroger
Manufacturers Hanover
May Dept. Stores
McKesson
Merrill Lynch
Monsanto
Morgan Stanley Group
Nash-Finch
National Intergroup
Nat'l Medical Enterprises
NWA
Occidental Petroleum
Paramount
Quaker Oats
Ralston Purina
RJR Nabisco
Santa Fe Southern Pacific
Scott Paper
Security Pacific
Super Valu Stores
Tenneco
Texaco
Textron
3M
Unisys
W.R. Grace
Xerox

Other facts, not reflected in the table, reinforce this conclusion:

■ Not only do the losers earn considerably lower returns on their investment than the winners, but also, as each year passes, they seem to drop even further behind.

■ Growth among the losers, whether in sales, in earnings, or in return on investment, is more volatile. One reason is that the losers have a higher ratio of debt to equity. If you like to ride on roller coasters, keep your money on the losers. But keep some Rolaids handy too.

■ The losers are less able to find profitable ways to reinvest shareholders' earnings, so they pay out more of those earnings in dividends.

■ The market truism about higher risk accompanying higher reward doesn't apply. The winners here earn their higher shareholder returns with exactly the same beta—a measure of stock price volatility, and therefore risk—as the losers.

Why should any of this be? While statistical analysis reveals the trend, it doesn't explain it. But a certain perverse explanation seems apparent. If a company's stock is rising, the board of directors can grant stock options to top executives and expect to see them well rewarded. Even if the stock is falling but directors expect it to turn around, options should pay off. But if the company is going nowhere and directors don't expect much change, then one way to make sure executives will collect on their incentive plan is to give them restricted stock. This assumes, of course, that directors for some reason want to give executives a great deal of money even when the company is performing badly.

That may not make sense. But after 23 years advising boards of hundreds of America's largest corporations, I must report that this is what a lot of directors want to do. In a way, therefore, it makes perfect sense that restricted-stock companies on the whole perform worse than others. That's why they award restricted stock in the first place.

One more thing: The losers pay their CEOs a lot more than the winners. Add together the base salary and bonus of the CEOs and it turns out that the average loser pays 12% more than the average winner. Add together base salary, bonus, and annualized long-term incentive values, and the average loser pays 41% more than the average winner. Now we know at least one reason the losers are losers. They pay their top executives too much.

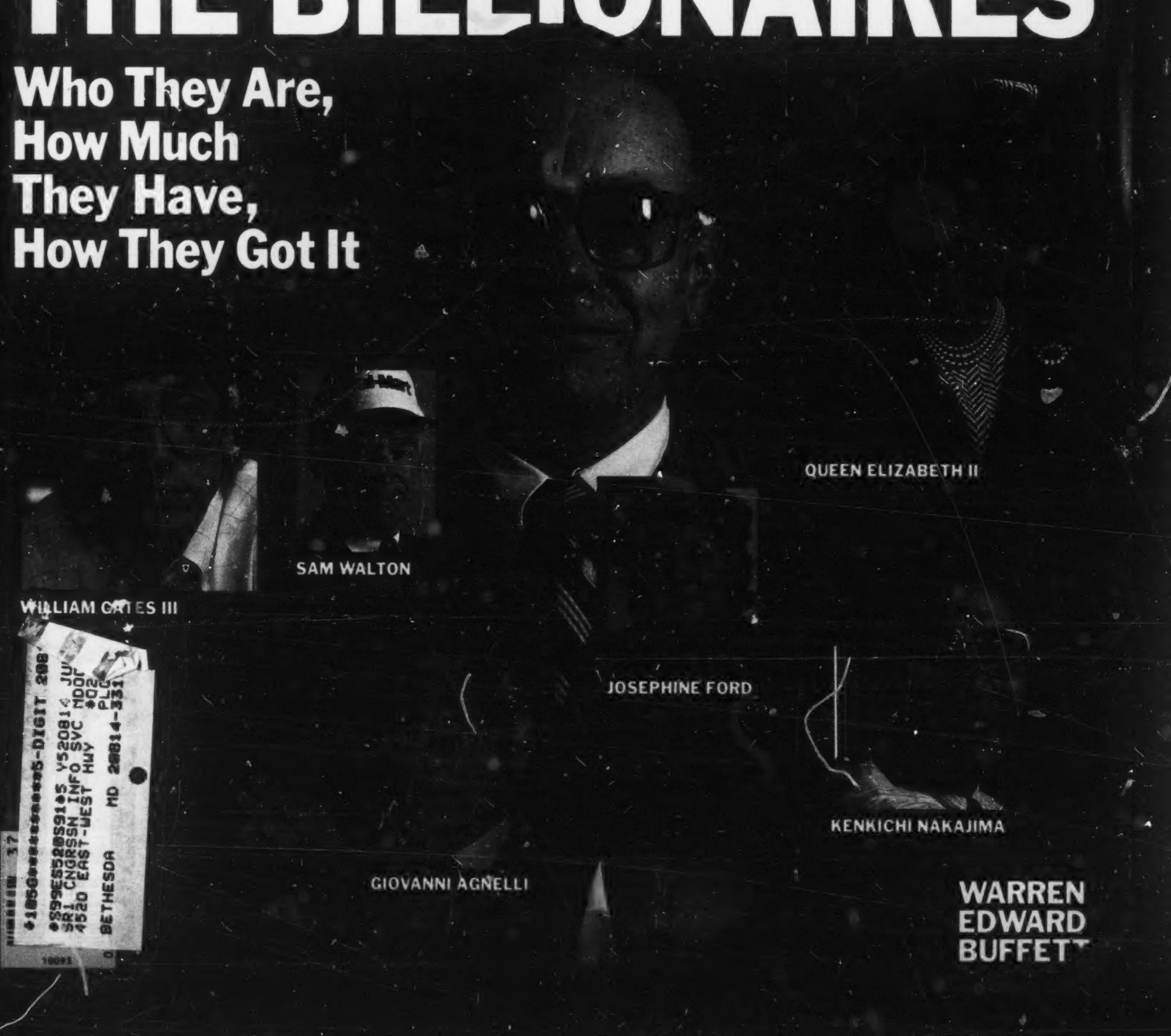
So don't fall asleep next time you pick up a proxy statement. Read that remuneration section thoroughly. And look for those two little words, restricted stock. There's gold in those words. ■

C8900 -1

CAUTION ON STOCKS • UNITED AIRLINES FOR SALE • HOT EXECUTIVE GADGETS

THE BILLIONAIRES

Who They Are, How Much They Have, How They Got It


QUEEN ELIZABETH II
SAM WALTON
WILLIAM GATES III
JOSEPHINE FORD
KENKICHI NAKAJIMA
GIOVANNI AGNELLI
WARREN EDWARD BUFFETT

5-DIGIT 208
SRI CNGRSSN INFO SVC MDOC
4520 EAST-WEST HWY PLC
BETHESDA MD 20814-331

SEPTEMBER 11, 1989

FORTUNE

HUSSEIN—SIPA

With a royal patrimony worth $10.9 billion, Queen Elizabeth II is the world's richest woman.
COVER STORIES/
PAGE 44

WEALTH/Cover Stories

THE BILLIONAIRES: DO THEY PAY THEIR WAY? 44

For the most part, yes. Many are shrewd risk takers, creating new companies, even whole industries, and lots of jobs. But they also serve the rest of society simply by enjoying the good life and thus making work look worth the trouble. Though some demonstrate a voracious yen to spend, others take pains to give away most of what they have. A slightly irreverent essay reveals the meaning of wealth and how the rich pay their freight. *by Alan Farnham*

HOW TO LIVE WITH A BILLION 50

It's not as easy as you might think. The price of effulgence is sky high, reclusiveness costs even more. Here's a glimpse into the lives of the super-rich and how they cope with wealth and publicity.

THE LIST OF BILLIONAIRES 73

Meet the world's 157 wealthiest individuals and close-knit families.

INDEX TO THE LIST 133

POLITICS & POLICY

SO THE COLD WAR IS WON. NOW WHAT? 137

With doddering old enemies looking less fearsome, the U.S. should pay more attention to vigorous old friends. *by Richard I. Kirkland Jr.*

DEALS

CAN UNITED AFFORD TO BE TAKEN OVER? 145

As the battle for UAL Corp. heats up, airline stocks are soaring. But this industry needs new planes, not new debt. *by Kenneth Labich*

COVER PHOTOGRAPHS:
Buffett by Mark Hanauer—Onyx; Gates, Rich Frishman; Walton, Louis Psihoyos—Matrix; Agnelli, Sichov—Sipa; Ford, George Lange; Elizabeth II, Chancellor—Alpha/Globe; Nakajima, Robert Wallis—JB Pictures

VOL. 120, NO. 6

"One of her ancestors was Attila the Hun and one of mine was Genghis Khan."

PAGE 50

"He has a way of making absolutely sure people come in early and stay late."

PAGE 145

"If you make a mistake, then holy hell will break loose very quickly."

PAGE 155

"We aspire to your pleasant way of life. We want to buy it, so come sell it to us."

PAGE 159

"Corporate headquarters are another treasure-trove waiting to be discovered."

PAGE 189

"Sport is one of the main reasons why a lot of kids stay in school. It is not just fun and games."

PAGE 209

CORPORATE PERFORMANCE

COMPANIES TO WATCH 151

Toys "R" Us, Santa's superelf, is stocking up on must-buy videogames, racing cars, and a new baby doll for Christmas. *by Faye Rice*

Also: Fedders, Sigma Designs, Constar International, and CXR Telcom.

MONEY & MARKETS

A RARE GLIMPSE INSIDE THE FED 155

Former governor Robert Heller contrasts the Volcker years with the Greenspan regime. He comes away convinced that the nation's central bank can tame inflation without a recession.

SELLING

READY, SET, SELL—JAPAN IS BUYING 159

The retailing revolution the West has been waiting for is here. Flamboyant merchandising is edging aside mom and pop stores. American goods are suddenly hot. *by Carla Rapoport*

MANAGING

HOW TO CUT THE COST OF HEADQUARTERS 189

Losing the battle of overhead bulge? Most companies are. But some have found new ways to shrink expenses—like forcing their staffs to compete with outside suppliers. *by Terence P. Paré*

TECHNOLOGY

GADGETS FOR EXECUTIVES 200

These nifty electronic gizmos are no mere gewgaws but a cornucopia of serious productivity-boosting tools. *by Brian O'Reilly*

DEPARTMENTS

EDITOR'S DESK 6

INDEX 8

NEWS/TRENDS 10

Is U.S. business giving away technology? A new career for Warren Buffett, hot wheels for yuppie bikers, Bush picks a free-marketer for the SEC, and more.

FORTUNE FORECAST 25

The rainy summer will lift farm incomes and stunt the rise in food prices. *by Theodore Young*

Also: Inflation is dormant but not dead.

PERSONAL INVESTING 31

The Dow is back near its precrash highs. Stocks are much safer than they were two years ago, but now is the time for caution. *by John J. Curran*

Also: Making odd lots into a silk purse, a contrarian case for junk bonds, and Portfolio Talk with mutual fund manager Edward Antoian.

FORTUNE PEOPLE 209

J. D. Power knows what drives car buyers, Frank Lorenzo toughs out Eastern's striking pilots, Camilla Dietz Bergeron shifts from picking stocks to flogging rocks, and more. *by Mark Alpert*

ON THE RISE 210

LETTERS TO FORTUNE 219

ITT Chairman Rand Araskog trashes LBOs, Toyota's luxury Lexus draws a yawn, and more.

KEEPING UP 223

The Vegas connection, two for the seesaw, looking leftward, and more. *by Daniel Seligman*

EDITOR-IN-CHIEF Jason McManus
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, John J. Curran, Marta F. Dorion, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Colin Leinster, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Bill Saporito, Stratford P. Sherman, Lee Smith (Washington)
ASSOCIATE EDITORS Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Alan Farnham, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, CA), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Robert E. Norton (Washington), Peter Nulty, Brian O'Reilly, Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Lenore Schiff, Brenton R. Schlender (San Francisco), Patricia Sellers, Andrew Evan Serwer, Thomas A. Stewart, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS John F. Lawrence, Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo), Richard S. Teitelbaum
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Charles J. Attardi, Leslie Brenner, Jonathan Brown, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Simone M. Kilian, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, David V. Rile, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CONSUMER MARKETING DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

A WROUGHT-IRON GATE stands clasped shut at the mouth of a tree-lined drive. Long yachts cluster like swans in a harbor. A red Rolls-Royce slides down Fifth Avenue. Encountering the familiar toys and appurtenances of great wealth invariably provokes deep ambivalence in us all. How should we feel about fortunes in the *billions*? Does such wealth concentrated in the hands of one individual condemn or validate the capitalist system? And what purpose does a billion-dollar fortune serve?

ANDY FREEBERG

Billionaire watchers Slovak, Lawrence, Farnham, and Perry

The meaning of wealth is the subject of the lead essay in our third annual survey of the world's billionaires. Associate editor Alan Farnham, who wrote the article, began by sitting down with a six-foot stack of economics textbooks, fully prepared to immerse himself in the role of huge fortunes in Western economies. When, to his surprise, he found next to nothing on the topic, he took his questions directly to the economists who wrote the books, and to a host of others, including the Communist Party USA. Says Farnham: "I was surprised to find they were not in favor of confiscating personal property." Among his conclusions: Great riches make real for the rest of us that pot at the end of the rainbow; the behavior of some who possess them shows us the limits to material pleasures.

Just how—and how well—billionaires handle being so wealthy is the subject of the second story in our package, a tripartite piece titled "How to Live With a Billion." Farnham examines the commendable billionaires who do their civic duty and do it well. Reporter Julianne Slovak looks at those ultrarich who court publicity—or at least can't help attracting it. Associate editor Nancy Perry unmasks the other kind, the mysterious rich who hide from the public eye—and finds surprising reasons for their furtiveness.

Slovak was also chief detective in this year's effort. Few billionaires publish annual reports. So, with the aid of reporters David Morrow, William Sheeline, and Gabrielle Solomon and international correspondents galore, Slovak scoured the world for undiscovered riches. That's the main reason 32 new fortunes appear, spread as far afield as Istanbul and Taipei and swelling the list to 157 individuals and tight-knit families. In all, Slovak spent four months, including five consecutive weekends, analyzing the data. Photo researcher Tina Limer peered at over 1,000 pictures to select the most telling. Nai Lee Lum designed the layouts.

The result of these labors is the most comprehensive and accurate survey of the world's most affluent citizenry. Observes John Lawrence, who edited the package: "Much as we may envy the rich, we like the idea that such good fortune could befall any one of us, or at least somebody we know well enough to hit up for a loan."

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President; Joseph A. Ripp, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, Fla. 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-541-1000. © 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company. **For subscription queries, call Customer Service at 1-800-541-1000.**

A ROLLS IS A ROLLS IS A ROLLS

■ It's an investment, you tell yourself as you plop down $14,000 for a 1962 Rolls-Royce Silver Cloud. Not so, says S. Prestley Blake, the retired chairman of **Friendly Ice Cream**, who owns more than a dozen. "By the time you fix the car up, it will sink you. You don't do this to make money."

JOHN NORDELL—JB PICTURES

Rolls CEO Peter Ward, caught between 1927 and 1977 models

Indeed, the resale value of an old Rolls-Royce trails other collectible cars, such as Ferraris, which have brought in big profits on the auction block in the past few years. But in August, 1,200 enthusiasts turned out anyway for the largest Rolls-Royce Owners' Club annual convention ever.

Rolls-Royce loyalists point out that while many classic cars are collecting dust in garages, theirs are on the road. Says Blake: "You wouldn't take out your Ferrari to drive two miles to a shopping center." Then again, would you park your 1910 Silver Ghost at the drive-in? **– Andrew Erdman**

MANAGING A COMPANY FROM EXILE

■ Cornelius John Koreman may not have given much thought to the telephone in the past, but it's taken on new importance since he's been trying to manage his company by long distance. Koreman, 51, has been running **Ford Motor of Venezuela** from Michigan and the Caribbean with the help of a phone and a fax machine.

He was on home leave when he heard that he was among dozens of local and foreign executives ordered detained by a Caracas judge investigating currency violations. "I decided it would not be prudent to return until this matter is resolved," says Koreman, who denies any wrongdoing by Ford. The investigation centers on charges that many Venezuelan importers paid bribes to obtain dollars at discount rates, and then resold them on the black market for huge profits.

Koreman and other foreign executives have decided not to risk arrest under a law that forbids bail. So he's running up quite a phone bill. When the telephone won't do, he meets with his managers on the island of Curaçao, off the Venezuelan coast. But it's no idyll. "I have no previous experience managing this way," says Koreman. "It remains to be seen whether we can be effective." **– Wilton Woods**

DENTAL GLOSS

■ Dentists just can't help smiling these days. Although cavities are down sharply, Americans continue to put plenty of money where their mouths are: an estimated $36 billion this year, rising at the rate of $1.6 billion annually.

The future looks even whiter. The country's graying population has many more teeth intact than did previous generations. Dentists have done such a good preservation job that only 4% of all adults under 65 will ever wear dentures. That means more teeth to care for. An older clientele has special problems, notably gum disease and root decay.

Not that dentists are ignoring the other end of the demographic spectrum. Pediatric dentistry has soared with the baby-boomers' baby boomlet. Practitioners ply their trade in brightly colored offices replete with toys and videogames, to make a child's stay child's play.

For the vast population both young and old, cosmetic dentistry is the new come-on. Dentists have popularized innovative procedures like veneering and bonding that cover stains, close gaps, and repair chips. Says Dr. Arthur Dugoni, president of the American Dental Association: "Bonding allows the patient to become the Mr. or Ms. America of his or her dreams with a beautiful smile." By the turn of the century, Dugoni says, cosmetic dentistry could make up 40% of the industry's total take.

To cap it all, the job market for dentists looks cheerier than ever. The ratio of dentists to the U.S. population is poised to fall precipitously from the current 60.2 per 100,000 to 44.8 by 2020, the lowest since World War I. Enrollment at dental schools, down by a third since 1978, has been hit by high tuition and cuts in federal funds.

DAVID WALBERG

Making dentistry fun for kids

That's bad news for patients, who could soon find themselves waiting four to six weeks for an appointment.

– Rahul Jacob

SOCIALIZED LOSSES

■ *"We had a bad banking situation. Some of our bankers . . . had used the money entrusted to them in speculations and unwise loans . . . It was the government's job to straighten out the situation."*

George Bush on the recent

savings and loan rescue? No. Franklin Delano Roosevelt in his first fireside chat, which marked the end of the 1933 banking crisis. The $24 million in losses incurred paying off depositors between 1934 and 1940 seems trivial compared to this year's Great American Bailout, which could cost $200 billion. But it set an arguably unhealthy precedent for government intervention. As social critic Kenneth Burke once put it, "One thing our capitalists are always willing to socialize is a loss."

BAILOUTS

Crisis Government outlay	Profit or loss
Banking 1933 $250 million	−$24 million
Penn Central/Conrail 1970 $7.8 billion	−$5.9 billion
Lockheed 1971 Loan guarantees: $250 million	$31 million
New York City 1975 Loans & guarantees: $4 billion	$32 million*
Chrysler 1980 Loan guarantees: $1.5 billion	$336 million
Continental Bank 1984 $4.5 billion	−$1.5 billion*
Farm Credit System 1988 $164 million or more	N.A.
Savings & loan industry 1989 $159 billion	−$200 billion*

* Estimate.

SOURCE: CONGRESSIONAL QUARTERLY

In fairness, corporations can boast of a fairly strong record of payback on major bailouts (see table). **Chrysler**'s fabled hat-in-hand foray to Washington had a happy ending—a tidy profit for Uncle Sam. And **Continental Bank** hasn't done badly since its near collapse in 1984. Although the FDIC expects to lose about $1.5 billion of the $4.5 billion it put up, it has already recovered about $1 billion.

No one is predicting so happy an ending to the S&L fiasco. Not many are even predicting where it will end. Says Mark Riedy, president of the National Council of Savings Institutions: "Nobody wants to admit it, but if the bailout is not a black hole in space, it's not too far from there." **– R.J.**

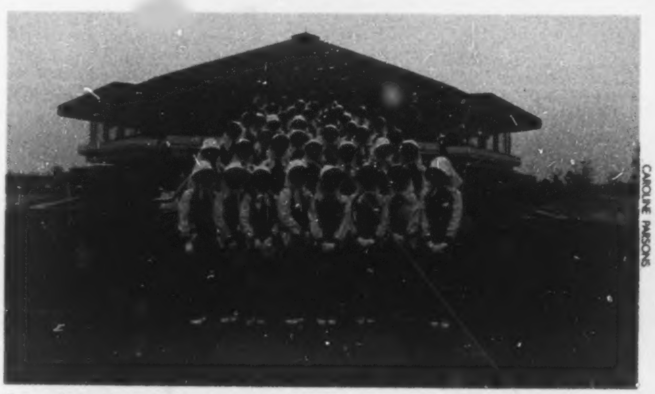
BUSH'S SEC MAN

■ President Bush's choice to head the Securities and Exchange Commission is the man who designed the S&L bailout bill and pushed it through Congress. Richard Breeden, 39, a former securities lawyer with New York's Cravath Swaine & Moore, also directed a task force on financial regulation for Vice President Bush back in 1984 that produced a comprehensive package of reforms. The proposals promptly sank without action from Congress. But many of the recommendations found their way into the bailout bill.

Breeden, who has a reputation as a free-marketer, will need plenty of political skills in his new job. While the SEC has been out of the public eye in recent years, it has been busy addressing technical issues that are dry but crucial to investors. Example: what banks must disclose about troubled Third World loans. Rodgin Cohen, a partner at Sullivan & Cromwell, says a major issue Breeden will face is how to keep U.S. markets internationally competitive without weakening the stiff disclosure requirements that protect investors. **– W.W.**

SEC nominee Breeden

KATHLEEN LAMBERT



CAROLINE PARSONS

Japan's golf craze has crowded courses courting these caddies.

JAPAN'S CADDY CRISIS

■ Times are almost too good for Japan's golfing industry. New courses are being built at a rate of 40 to 50 per year. Tee-offs are climbing 6% to 7% annually. The problem: finding enough caddies to keep up with this rapidly growing pastime.

Japanese "kyah-days" have been a special breed. Well trained in the lay of the land and dressed from head to foot in the uniform of the club, most are housewives from the nearby countryside. They toil a seven-hour day, sometimes six days a week, to earn extra cash. In a country that rivals Washington, D.C., for hot, sticky summers, and with an average of 1,000 players passing through every course every week, that's not easy.

The demand-supply imbalance is pushing up salaries so that a steady caddie can earn $1,700 a month—more than a clerical worker. Some courses are reportedly adding as lures such perks as overseas training trips and well-equipped dormitories. **– Sally Solo**

FREEMAN'S FALL

■ Robert Freeman, the former head of arbitrage at **Goldman Sachs**, always insisted he was innocent of insider-trading charges (FORTUNE, May 25, 1987). He was arrested without warning by federal marshals while shocked colleagues watched two years ago. Freeman will plead guilty to one count of mail fraud on September 5. His lawyers say he was never part of a conspiracy and "wants to put this episode behind him." F

NOW HEAR THIS

■ **CLINTON GALLOWAY,** 37, president and CEO of Preferred Communications, who is still waiting for a trial date three years after the U.S. Supreme Court backed his right to challenge cable TV monopolies.

"I sometimes think it would be easier to get a trial in Russia."

■ **BENJAMIN P. NAGEAK,** 39, chairman of the Eskimo Walrus Commission, on walrus tusk poaching that could lead to greater restrictions on walrus hunters:

"A few rotten apples are making the whole bushel look bad."

■ **WAYNE M. HOFFMAN,** 66, former chairman of Tiger International, on longtime friend Barron Hilton, who has put the renowned hotel chain up for sale:

"He really has an abiding love for hunting and soaring, and he really doesn't care about the social circuit or the FORTUNE 500."

The Billionaires

RANKED BY NET WORTH

BY JULIANNE SLOVAK

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
SULTAN HASSANAL BOLKIAH, 43	Bandar Seri Begawan BRUNEI	▨	**$25.0**	**Oil and gas; $20 billion in foreign investments.** The 29th Sultan of Brunei presides over one of the smallest (pop. 240,000) and wealthiest nations in the world. He assumed the throne at 21 at his father's behest. Brunei, on the northwest coast of Borneo in the South China Sea, gained full independence from Britain in 1984. The Sultan often appears in a medaled uniform, but his main claim to fame was a $10 million donation to the Nicaraguan contras that wound up in the wrong Swiss bank account and became involved in the Iran-contra affair. Two wives, three sons, and six daughters.
KING FAHD BIN ABDUL AZIZ AL SAUD, 69 **and family**	Riyadh SAUDI ARABIA	▨	**$18.0**	**The Saud family can draw at will on the kingdom's oil reserves.** A moody king who feels more comfortable with the jet set than with the desert Saudis, Fahd is one of the Sudairi Seven, the seven favorite sons of King Abdul Aziz, founder of Saudi Arabia (he had 52 official sons and several wives). Their mother was Hassa bint Ahmed al Sudairi. Fahd is scheduled to visit Washington this month.
FORREST E. MARS SR., 85 **FORREST E. MARS JR.,** 58 **JOHN F. MARS,** 53 **JACQUELINE MARS VOGEL,** 49	Las Vegas NEVADA McLean VIRGINIA Arlington VIRGINIA Bedminster NEW JERSEY	▨	**$12.5**	**100% of Mars Inc.** Secretive descendants of company founder Frank Mars remain America's richest family. While the Mars clan openly detests press coverage (Forrest Sr. once sicked the cops on two FORTUNE reporters for calling him at home), Mars spends big bucks, an estimated $300 million last year alone, on advertising to keep the company's products near the minds and pocketbooks of consumers. The push pays dividends. Profits of Mars Inc. reached an estimated $780 million last year on sales of $8 billion. Forrest Sr., inventor of the Milky Way and Snickers bars, lives quietly atop his candy factory in Las Vegas, where he retired to start a new company, while his two brooding boys run the business. It also makes M&M's, Uncle Ben's Rice, and Kal Kan pet food.
QUEEN ELIZABETH II, 63	London ENGLAND	▨	**$10.9**	**Real estate, including Balmoral Castle in Scotland (50,000 acres), Sandringham House in Norfolk (20,000 acres); major property holdings in the U.S. and on the Continent; racehorses; jewelry; art, stamp, porcelain, and silver collections; vast shareholdings.** Elizabeth, born third in line to the British throne, is the world's richest woman. Her pragmatic Majesty has invested wisely. The queen's stock portfolio increased in value 25% last year, and her art collection appreciated by 50%. She owns 280,000 acres of land, including 350 in central London and virtually all the land around the coast of Britain, bringing in $73 million a year. She now turns that sum over to the Treasury and receives an annual payment ($7.3 million last year) from the Civil List.
SAMUEL I. NEWHOUSE JR., 61 **DONALD E. NEWHOUSE,** 59	New York NEW YORK	▨	**$10.0**	**100% of Advance Publications and Newhouse Broadcasting.** The sons of Sam Newhouse Sr., who left a media empire of 29 newspapers and five radio stations when he died in 1979, oversee a publishing and cable company whose holdings have leaped in value. Today the brothers control some 26 daily newspapers—including the Newark *Star-Ledger* and the Cleveland *Plain Dealer*—as well as book publisher Random House, which has added Crown Publishing, Schocken Books, and Century Hutchinson to its stable, and more than 40 magazines, including the Condé Nast publications and the *New Yorker*.
TSAI WAN-LIN, 64 **and family**	Taipei TAIWAN	N	**$9.0**	**Yuan-lin Group; includes 65% of Cathay Life Insurance and 60% of Cathay Construction.** One of the highest-flying stocks in an inflated market, Cathay Life recently carried a price/earnings ratio of 206. The son of a poor rice farmer, Tsai Wan-lin and his older brother (who died in 1987) ran a fruit and vegetable stand as young men. Later they expanded into soy sauce manufacturing and branched out into diverse activities, including real estate, finance, construction, hotels, plastics, and more.
SAM MOORE WALTON, 71 **and family**	Bentonville ARKANSAS	▨	**$8.9**	**39% of Wal-Mart Stores (annual sales: $20.6 billion).** Son of a banker in Kingfisher, Oklahoma, Mr. Sam, as he likes to be called, opened his first discount store in Rogers, Arkansas, in 1962. He took Wal-Mart public in 1970, and this year the company was voted America's most admired retailer in FORTUNE's annual survey. Average annual return to investors for the past five years: 36%. Annual dividends on the 220 million Wal-Mart shares Sam, his wife, Helen, and their four children own amount to $48 million. Down-to-earth Sam drives a pickup and loves to visit his stores.
ALBERT REICHMANN, 60 **PAUL REICHMANN,** 59 **RALPH REICHMANN,** 56	Toronto ONTARIO	▨	**$8.4**	**Olympia & York, largest owner of New York City commercial real estate (including Battery Park City); through Olympia & York, 73% of Gulf Canada, 82% of Abitibi-Price, 89% of GW Utilities, 24.5% of Campeau Corp., 10.7% of Santa Fe Southern Pacific Corp., and other companies.** The Reichmann brothers control one of the world's largest property development and landholding enterprises, with more than 60 office buildings in North America, including 14 in Manhattan. They are building the $6 billion Canary Wharf project in London; strict Orthodox Jews, the Reichmanns are also putting up a $65 million civic center in Jerusalem. To escape the Nazis, they fled Austria for Tangier, then moved to Canada in 1956. Albert Reichmann spearheaded the effort to aid Armenians in the wake of the massive earthquake last December.

N	NEWCOMERS	▨	AMERICANS	▨	EUROPEANS	▨	ASIANS	▨	OTHERS

The Billionaires

NAME Age		**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
GERALD GROSVENOR, 37 **and family**	London ENGLAND ▨	**$6.9**	**300 acres in London's upper-crust Belgravia and Mayfair districts; 13,000-acre estate; 100,000 acres of Scottish forest land; Grosvenor International Holdings (real estate in Hawaii, San Francisco, Chicago, and British Columbia).** His Vancouver-based property development company owns 60 commercial buildings outside Britain, and he's expanding in the States. Meanwhile Grosvenor, the sixth Duke of Westminster, has been none too popular with the folks closer to home, trying to prevent some of his tenants from exercising the right to buy their homes and ordering the people who live in Eaton Square to stop feeding the birds. In a more charitable vein, he's heading Prince Charles's new drive to help economically deprived villages.
KENNETH ROY THOMSON, 66 **and family**	Toronto ONTARIO ▨	**$6.9**	**68.5% of Thomson Corp., newspapers; 74% of Hudson's Bay (more than 400 department stores, including Hudson's Bay, Simpsons, Field's); energy holdings; financial services; a distillery; real estate.** His father, Roy, was a barber who bought his first radio station and newspaper in 1931. Roy pioneered an early version of the leveraged buyout in the 1940s by borrowing against the company's future profits to build a Canadian newspaper monopoly. He kept costs to a minimum by rationing even pencils and toilet paper, and by 1953 resettled in England as Lord Thomson of Fleet. The second Lord Thomson inherited the company as well as an acquisitive bent. He and wife Marilyn have three children, including 31-year-old heir apparent David. Owns the world's largest collection of paintings by Dutch-Canadian artist Cornelius Krieghoff.
KENNETH COLIN IRVING, 90 **JAMES KENNETH IRVING,** 60 **ARTHUR LEIGH IRVING,** 57 **JOHN E. IRVING,** 56	Saint John NEW BRUNSWICK ▨	**$5.6**	**300 companies: oil, shipbuilding, forestry (3.5 million acres of prime timberland), the province's four major English-language dailies, and its English-language TV and radio stations.** The Irvings *are* New Brunswick. At 90, K.C. still runs the company. He and his three sons, all college dropouts, have won $6 billion in contracts to supply the Canadian navy with ships.
PERRY BASS, 75 **SID RICHARDSON BASS,** 46 **EDWARD PERRY BASS,** 44 **ROBERT MUSE BASS,** 41 **LEE MARSHALL BASS,** 33	Fort Worth TEXAS ▨	**$5.0**	**Oil; real estate; investments in Walt Disney Co., American Medical International, and more.** The Bass brothers, along with their father, Perry, inherited a multimillion-dollar fortune from Perry's uncle, wildcatter and lifelong bachelor Sid Richardson. But they made their billions and their reputations as takeover artists, with Sid Bass leading the way. In the past couple of years, Robert has been lead dealmaker, while Sid was involved with an acquisition, and headlines, of a different kind. He married Iranian-born Manhattan socialite Mercedes Kellogg, whom he met while he was still wed to Anne Hendricks Bass and she to Francis Kellogg. Sid learned that love is sometimes dear indeed. Anne's take for 21 years of marriage: $200 million.
JOHN WERNER KLUGE, 74	Charlottesville VIRGINIA ▨	**$5.0**	**97.4% of Metromedia Co.; cash; real estate, stockholdings.** With packed pockets from asset sales, Kluge spent the dough wisely and watched his fortune swell like yeast. His cellular phone systems in New York and Philadelphia, valued in 1986 at $370 million, are now worth some $1.8 billion. Kluge (pronounced KLOO-gee) also owns the profitable Ponderosa chain of restaurants and a majority interest in Orion Pictures.
JAY PRITZKER, 67 **ROBERT PRITZKER,** 63 **and family**	Chicago ILLINOIS ▨	**$4.5**	**100% of Hyatt hotels; 100% of Marmon Group, a collection of 60 industrial corporations; stockholdings; trust funds.** Jay, a lawyer, and Robert, an engineer, have one of the globe's most diversified portfolios. The brothers hold properties like playing cards; one added, one discarded. Recent play: out of Braniff Airlines, into Ramada Inc., then out again. Not all their dealings are successful, however. Last year they joined forces with First Boston for a 13th-inning grab of RJR Nabisco and missed. Still, the Pritzkers produce: Earnings for Robert-run Marmon Group jumped 41% last year to $204 million. Sales for Hyatt, managed by Jay's son Thomas, are expected to reach $3 billion this year.

WHAT LIES BEHIND THE NUMBERS

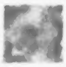
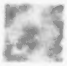
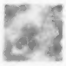
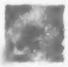
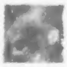
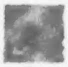
Estimates of net worth are based on published information or appraisals of asset values. To qualify, a prospect must have net worth—total assets after subtracting debt—of $1 billion or more. For those with holdings in publicly traded companies, the value of their shares was computed using the closing price on July 17. Currency conversions into U.S. dollars were based on July 17 exchange rates.

To determine the value of holdings in private companies, FORTUNE identified similar public companies, made reasonable adjustments for dissimilarities, and calculated a value based on the current market value of the public counterparts. In some cases we used prices paid for similar companies in recent takeovers or buyouts. Where data are lacking for ownership of shares in private companies, we used the best information available from persons knowledgeable about the companies and individuals involved. The list includes individuals or a "nuclear" family composed of husband and wife, parent and child, siblings, or some combination of those relationships. We tried to exclude cousins and in-laws, though when brothers and their children are involved in a business, the cousins obviously have a stake in a single fortune.

We are indebted to our correspondents around the world. Among sources outside the *Time* and FORTUNE network were Japan—*Nikkei Venture* magazine; Switzerland—Rico Carisch, a correspondent for *Bilanz* magazine; Middle East—Michael Field, a London business consultant and author of *The Merchants.* Data gathering was supervised by FORTUNE reporter Julianne Slovak, assisted by David Morrow, William Sheeline, Edward Baig, Gabrielle Solomon, and Rodney Erwin.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
SHEIKH JABER AHMED AL SABAH, 63 **and family**	KUWAIT		**$4.5**	**Ruler of an oil-rich land; vast foreign investments.** No high-living dilettante, this emir; his positions since 1949 have included chief of public security, Kuwait's liaison with oil companies, head of the Department of Finance, Minister of Finance and Economy, Commerce Minister, and Prime Minister. He is tough; when terrorists hijacked a Kuwaiti airliner and kept it in the air for two weeks, Jaber refused to give in. He lives modestly, for a sheikh, in the fairly simple Dasman Palace. Kuwait has been governed for more than 200 years in unbroken succession by the Al Sabah family.
QUEEN BEATRIX, 51	The Hague NETHERLANDS		**$4.4**	**A queen-size portfolio, including stock in Royal Dutch/Shell—all of it tax-exempt; jewels; real estate.** Daughter of Queen Juliana, this member of the House of Orange is immensely popular. Beatrix, who earned a law degree in 1961, owns a mansion in the central Netherlands. Her fortune began with ten Dutch guilders split among 12 heirs of William of Orange after he was murdered in 1585.
Y. Z. HSU, 78 **and family**	Taipei TAIWAN		**$4.2**	**Far Eastern Textile Group: includes Far Eastern Textile Corp., Asia Cement Corp., Far Eastern Department Stores, and Oriental Union Chemical Corp.** Hsu operated a textile factory in Shanghai in the late 1940s when mainland China was falling under control of the Chinese Communists. Hsu fled to Taiwan and branched into cement, synthetic fibers, and department stores. High school graduate Hsu wanted his sons to pursue higher education: Douglas, president of Far Eastern Textile, has an MBA from Columbia University, and John, president of Asia Cement, has a Ph.D. in aerospace engineering. Hsu has established a hospital, an engineering college, and a foundation that supports cultural events and scientific research.
GODFRIED BRENNINKMEIJER	Amsterdam NETHERLANDS		**$4.0**	**Major shareholder in C&A, chain of clothing stores (more than 500 in Europe, Hong Kong, Japan, and the U.S.).** The highly secretive company was founded by two Brenninkmeijer peddlers nearly 150 years ago.
ANNE COX CHAMBERS, 69 **BARBARA COX ANTHONY,** 66	Atlanta GEORGIA Honolulu HAWAII		**$4.0**	**98% of Cox Enterprises, which owns 19 daily newspapers, including the Atlanta *Constitution* and the Dayton *Daily News*, eight cable television stations, auto auctions, and cattle ranches.** America's wealthiest women, the Cox sisters are daughters of James M. Cox Sr., a three-term Ohio governor who founded the company and also found time to run for President in 1920. Anne and Barbara bought out the rest of the Cox family in 1985 for $1.8 billion; Barbara's son James Cox Kennedy, 41, is chairman. Anne owns an Atlanta estate, a summer villa in Provence, and a lavish New York apartment.
CHARLES KOCH, 53 **DAVID KOCH,** 49	Wichita KANSAS New York NEW YORK		**$4.0**	**80% of Koch Industries.** Family scuffles are common for the Kochs, whose "sibling rivalries" include frequent court battles with brothers William and Fred. A $1.5 billion buyout in 1983 settled one bitter legal battle and skimmed William and Fred from Koch Industries, leaving Charles and David in control. But even that didn't finish the feud. William recently told the feds that Koch Industries was stealing oil from wells owned by American Indians. The company vehemently denies the charges. Between the feuds, Koch Industries prospered. Revenues reached an estimated $13 billion last year.
Y. C. WANG, 72 **Y. T. WANG,** 67 **and family**	Taipei TAIWAN		**$4.0**	**Formosa Plastics Group, the largest conglomerate in Taiwan and world's largest producer of resins; includes 14 plants in the U.S.** A workaholic, Chairman Y.C. "vacations" by visiting company plants. He lives in a spacious penthouse atop the Formosa Plastics building. In the 1950s, Americans supervising an economic aid program proposed a resin project. Y.C., then the owner of a lumber business, accepted the challenge most of Taiwan's large business groups turned down as uneconomical. His brother Y.T. is President of Formosa.
WARREN EDWARD BUFFETT, 59	Omaha NEBRASKA		**$3.6**	**45% of Berkshire Hathaway, the vehicle for investments in Capital Cities/ABC, Geico, Washington Post, Salomon, and most recently Gillette and USAir Group.** Buffett played a bartender on the ABC soap *Loving*, but he has put in his best performance as chairman of Berkshire Hathaway, a property and casualty insurer that takes large positions in other publicly traded companies. Berkshire shares that sold for $12 each in 1965, when Buffett took over, recently went for more than $6,900 apiece. He indulged his passion for cherry Coke this year by slurping up 6.3% of Coca-Cola Co. Married to Susan Thompson. Three children.
JOHANNA QUANDT, 67 **and family**	Wiesbaden WEST GERMANY		**$3.6**	**60% of Bayerische Motorenwerke (BMW); stocks in some 100 other companies.** After years of lackluster performance, BMW recently introduced three lines of cars; earnings were up 26% in 1988. Johanna was the second wife of the late Herbert Quandt, whose father started the family business. She visits company headquarters in Wiesbaden nearly every day and is said to have a keen business mind. Recently she picked up American Data Card Corp. for $175 million.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
FREDERIK H. FENTENER VAN VLISSINGEN, 56 **and family**	Hilversum NETHERLANDS	■	**$3.5**	**Major shareholdings in Steenkolen Handels Vereniging (SHV), worldwide distributor of consumer goods; Noro Group, investment manager for individuals and institutions; Akzo NV, chemicals.** Vereniging sold its North Sea oilfields this year and in return gained control of two liquefied petroleum gas (LPG) companies in France and England. The deal boosted Vereniging's value by almost $1 billion.
COSTAS MICHAEL LEMOS, 78	Lausanne SWITZERLAND	N	**$3.5**	**70% of his fortune is in cash; 20% in real estate, mostly in the U.S.; 10% in international shipping.** Lemos comes from Oinouse, a small Greek island that has a population of about 500 but controls 40% of Greek shipping. After law school he earned his captain's license, then worked the North-South American trade route before building up his own business after the war. By the 1960s he was the largest single shipowner in Greece, but a decade later he realized the worldwide recession would be devastating for the industry. He started selling his ships for cash and moved into real estate. Lives in Switzerland, Greece, London, and Manhattan. Daughters Chrysanthi and Irini; son Michael Costas is heir to his fortune.
A. ALFRED TAUBMAN, 65	Bloomfield Hills MICHIGAN	■	**$3.5**	**56% of Sotheby's; real estate (22 shopping malls, 100 movie screens, riverfront apartment complex in Detroit, two office buildings in midtown Manhattan); 500 A&W restaurants; 100% of Woodward & Lothrop and John Wanamaker department store chains.** The auction business is booming, and the value of Taubman's shares of Sotheby's has doubled since last year's list.
KENKICHI NAKAJIMA, 68	Kiryu JAPAN	N	**$3.4**	**83.3% of Heiwa Co., world's largest maker of pachinko machines (similar to pinball); sales: $360 million.** After World War II, Korean-born Nakajima, currently the richest Japanese, started a pachinko machine company—"because pachinko has nothing to do with war"—and named it Heiwa, or "peace" in Japanese. Nakajima also likes golf, so he's building a course—of course.
ALAN, LORD SAINSBURY, 87 **SIR ROBERT SAINSBURY,** 83 **SIR JOHN SAINSBURY,** 61 **DAVID SAINSBURY,** 48	London ENGLAND	■	**$3.4**	**55% of Sainsbury's: Britain's largest grocery store chain, with 286 stores; supermarkets in New England.** Alan, Lord Sainsbury and Sir Robert share the presidency. Lord Sainsbury's other passion is the arts. He is head of the Royal Opera House and is married to former ballerina Anya Linden. The family is funding an extension of the National Gallery in London. Sir John makes most lists of Britain's best managers.
GAD RAUSING, 67 **HANS RAUSING,** 63	London ENGLAND Sussex ENGLAND	■	**$3.3**	**100% of Tetra Pak (worldwide sales: approximately $2.2 billion), one of the world's largest liquid-food packagers.** The company name is derived from the tetrahedron-shaped container that Ruben Rausing, father of Gad and Hans, designed more than 35 years ago in Sweden. In 1961, Tetra Pak introduced sterile vacuum packages that allowed unrefrigerated storage of milk, fruit juice, and other perishable liquids. Gad and Hans have found an almost insatiable market in China, and control 60% of the liquid-food-packaging business in Europe. They have registered the company in the Netherlands, moved headquarters to Switzerland, and moved themselves to England.
RONALD OWEN PERELMAN, 46	New York NEW YORK	N	**$3.2**	**100% of Revlon; Coleman Co.; MacAndrews & Forbes; First Gibraltar, a savings and loan; 57% of Andrews Group; 95% of National Health Laboratories.** At age 11, he sat in on his father's board meetings. As a teenager, he was poring over balance sheets and annual reports after school every day, helping his father decide on acquisitions. His eclectic empire now includes producers of camping equipment, comic books, and licorice. Made Revlon over, sloughing off peripheral divisions and revitalizing its image with consumers and department store buyers. His idea of a good time is to go to sleep by 10 P.M., though he's been stepping out more since his marriage to entertainment reporter Claudia Cohen four years ago. Four children by a previous marriage.
YOSHIAKI TSUTSUMI, 55	Tokyo JAPAN	■	**$3.1**	**40% of Kokudo Keikaku, which owns 48% of land-rich Seibu Railway.** Yoshiaki, the illegitimate son of Yasujiro Tsutsumi, inherited most of a hefty family business of railroads and leisure operations when his father died in 1964. Twenty-five years later Yoshiaki runs the Seibu Railroad, a suburban Tokyo line; the Prince Hotels, a national chain; and ski resorts around the country. He also owns the Seibu Lions baseball team, in the same league as the new Daiei Hawks, owned by Isao Nakauchi (which see). Yoshiaki's half-brother Seiji inherited the retail operations of the family company. The brothers reportedly can't stand each other.
HENRY LEA HILLMAN, 70	Pittsburgh PENNSYLVANIA	■	**$3.0**	**Hillman Co.: real estate, distribution companies, venture capital investments; stockholdings.** Son of industrialist Hart Hillman, Henry inherited his father's business acumen. Diversifying out of the troubled steel and coal industries, he became an early backer of buyout king Kohlberg Kravis Roberts. An admitted risk taker, Hillman quietly took his lumps in the mid-1980s when high-tech investments in Silicon Valley went south.

N NEWCOMERS ■ AMERICANS ■ EUROPEANS ■ ASIANS ■ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
CARGILL MACMILLAN JR., 62 **WHITNEY MACMILLAN,** 59	Minneapolis MINNESOTA	■	**$3.0**	**60% of Cargill Inc.** Sales reached $38 billion last year, making it the largest private company in the U.S. Every grain of this giant agribusiness belongs to the Cargills and MacMillans, whose combined fortune is pegged conservatively at $5 billion. The company is healthy: Profits jumped 53% last year to $261 million. Cargill remains a director after retiring last year as senior vice president. Whitney is chairman and chief executive officer.
H. ROSS PEROT, 59	Dallas TEXAS	■	**$2.9**	**Cash; securities, including an interest in Next Inc.; venture capital; real estate.** Sold his Electronic Data Systems to General Motors in 1984 for a bundle and took a seat on GM's board; left two years later after disagreeing with GM Chairman Roger Smith about how the company should be managed. Perot sold his oil and gas holdings this year; he puts most of his money in certificates of deposit. He also has a stake in Alliance Airport, which his son is developing northeast of Fort Worth. Perot claims he invests only the yearly income from his CDs. It's hard to move a close-to-$3-billion "pile of money unless something really big happens," he says.
SUMNER M. REDSTONE, 66	Newton Centre MASSACHUSETTS	■	**$2.9**	**100% of National Amusements Inc. and 83% of Viacom.** A lawyer by trade, Redstone has become one of America's top entertainment moguls. Included in the Redstone portfolio are 520 movie screens in the U.S. and Britain, MTV, Showtime, the Movie Channel, and Nickelodeon. Viacom also distributes TV's two top-rated comedies, *The Cosby Show* and *Roseanne*. Viacom's stock rose 75% in the past year.
SILVIO BERLUSCONI, 53	Milan ITALY	■	**$2.8**	**Gruppo Fininvest (consolidated sales: $12.3 billion), holding company for TV networks and local stations; 70.7% of Standa department store chain; magazines; financial services; real estate; soccer team.** A professional singer when young, he founded the first private TV network in Italy in 1980, one year before the Italian constitutional court's decision overturning the government's full TV monopoly. His advertising agency, Publitalia, takes in 38% of all TV ad revenues; on a typical day last spring Berlusconi channels ran 179 commercials, compared with about 44 for the state-run networks. Lives in a medieval monastery with a basement disco.
EDGAR M. BRONFMAN SR., 60 **CHARLES R. BRONFMAN,** 58 **and family**	New York NEW YORK Montreal QUEBEC	■	**$2.8**	**37% of Seagram Co., the world's largest distiller; interests in more than 200 corporations and the Montreal Expos.** The brothers Bronfman inherited the company Montrealer Samuel Bronfman founded during Prohibition. Edgar, the eldest of Sam's four children, runs Seagram from New York. The more retiring Charles, who invested in the Expos in 1968, heads Canadian operations.
KONRAD HENKEL, 73 **and family**	Düsseldorf WEST GERMANY	■	**$2.7**	**40% of Henkel & Cie, a household products and chemicals concern.** The family expected Konrad's brother Jost to run the company grandfather Fritz founded. Konrad was more scientifically inclined, studying chemistry at three universities, then working at the Heidelberg Max Planck Institute for Medical Research. When Jost died in 1965, Konrad took over. One of Konrad's rules was that no family member has a birthright to an executive position. His wife, Gabrielle, is famous for her parties. Konrad loves American Westerns.
SIR JOHN MOORES, 93	Formby ENGLAND	■	**$2.7**	**Littlewoods, Britain's largest private company, operator of Littlewoods Football Pools, retail stores, mail-order companies; cash.** The owner of one of Britain's most secretive companies, Moores is still active in the business and is often seen touring stores in a wheelchair. It was a disappointing year for Littlewoods, with profits down because of startup costs in the direct-mail business, and a competitive retail market. The football pools did handsomely, though, with some 12 million Brits betting on the outcome of football (soccer in the U.S.) matches every week.
GARFIELD WESTON, 62 **W. GALEN WESTON,** 48	London ENGLAND Toronto ONTARIO	■	**$2.7**	**58% of George Weston Ltd.: Loblaw supermarket chain (400 stores), National Tea Co., E.B. Eddy Forest Products, 100 other subsidiaries; Associated British Foods, which has more than 100 subsidiaries.** Galen is known for his castles, fast cars, and royal connections. When the Queen Mother visited Toronto recently, she stayed at his mansion. His favorite retreat is 245-acre Roundwood Park castle near Dublin, Ireland. In 1983 five IRA soldiers stormed the castle in a kidnap attempt, but were shot by guards. Brother Garry leads a more private life, overseeing the family's British operations.
ERIVAN KARL HAUB, 57	Tacoma WASHINGTON	■	**$2.6**	**Owns Tengelmann Group, largest supermarket and drugstore chain in West Germany.** His mother came from the Schmitz-Scholl candymaking family. They were so anxious to remain anonymous, they named their retail food chain after their managing director. Haub's family didn't want him to go into the business, so he acquired work experience in the U.S., studied economics and management in Germany, and fought for his place in the company. He expanded Tengelmann by buying German and American chains, including New York's A&P. The extremely private Haub, his wife, and three sons live in the U.S., but he also spends considerable time minding the store in his native land.

N NEWCOMERS ■ AMERICANS ■ EUROPEANS ■ ASIANS ■ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
THOMAS SCHMIDHEINY, 44 **STEPHAN SCHMIDHEINY**, 41 **ALEXANDER SCHMIDHEINY**, 37	Zurich SWITZERLAND	▨	**$2.6**	**Holderbank, the world's largest cement company, owns U.S.-based Ideal Basic Industries; Anova Holding AG, in construction, electronics, packaging, real estate, banking, watches.** Thomas heads Holderbank, which has operations on five continents and is expanding in New York, Texas, and Mexico. The breakup value of the U.S. cement plants alone is as high as $3 billion. Anova has been diversified by Stephan; he also divested its asbestos facilities and is now successfully producing substitutes for the fiber. Youngest brother Alexander lives in California, where he runs the family wineries and a winter sports equipment manufacturer.
Y. F. CHANG, 62	Taipei TAIWAN	▨	**$2.5**	**Major ownership of Evergreen Group, the world's largest container shipping company.** Chang is something of an enigma. Privately held Evergreen is registered in Panama and is notoriously secretive about its affairs. Chang himself belongs to the Yikuantao religious sect, an amalgam of Buddhism, Taoism, and other beliefs.
LI KA-SHING, 61	HONG KONG	▨	**$2.5**	**About 40% of Cheung Kong, which controls Hutchison Whampoa, a Hong Kong trading conglomerate with interests in Hongkong Electric and Husky Oil of Canada; 9% of Canadian Imperial Bank of Commerce; real estate in Hong Kong and Canada.** When his father died in 1942, 14-year-old Li supported his mother and younger siblings as a junior salesman for a toy manufacturer. At 22 he started a plastics company and called it Cheung Kong, or "long river." Li became the first Chinese taipan in Hong Kong when in 1979 he acquired Hutchison Whampoa, one of the great trading houses traditionally run by British chiefs. Hong Kong's richest man, he controls a container terminal that handles 45% of the traffic in the world's biggest container port.
PRINCE JOHANNES VON THURN UND TAXIS, 63	Regensburg WEST GERMANY	▨	**$2.5**	**Thurn und Taxis Bank, one of West Germany's largest private banks; vast holdings in the Bavarian forest; real estate in West Germany, Brazil, and Canada; 100% of rare-metals supplier Produco; family brewery.** Johnny TNT is the scion of an ancient family, allegedly related to the 16th-century Italian poet Torquato Tasso, that had a monopoly for centuries as postmasters of the Hapsburg empire. The biggest news in the lives of the prince and high-living princess Gloria last year: Bavarian President Franz Joseph Strauss alighted from his helicopter at the Thurn und Taxis hunting preserve and collapsed at their feet, to die just hours later.
FRIEDRICH KARL FLICK, 62	Munich WEST GERMANY	▨	**$2.4**	**Cash from selling 10% of Daimler-Benz, 97% of Buderus Steel, 28% of W.R. Grace, and other companies; major shareholder in German insurance companies.** Twice divorced, the curmudgeonly Flick lives in a fortress-like villa—complete with an atomic bomb shelter—in the middle of Munich's Herzog Park. A staff of 120 tends to the needs of Flick and his live-in companion, former chambermaid Ingrid Rogger.
LAURENCE ALAN TISCH, 66 **PRESTON ROBERT TISCH**, 63	New York NEW YORK	▨	**$2.4**	**25.4% of Loews Corp., which owns 24.8% of CBS, 100% of Loews Hotels, 82% of CNA Financial, 95% of Bulova, and other investments.** The Brooklyn-born Tisch brothers, co-CEOs of Loews, started out in the real estate business by restoring and building hotels. Soon they turned to movie theaters. Larry, who graduated from New York University at 18, became something of a star himself when he took over as head of CBS in 1986. Former U.S. Postmaster General Bob joined his brother on the CBS board in 1988. Early this year the Tisch brothers donated $30 million to New York University and its medical center, which was renamed Tisch Hospital. Seven children between them; Bob's son Jonathan is CEO of Loews Hotels.
AUGUST VON FINCK, 59 **and family**	Munich WEST GERMANY	▨	**$2.3**	**Munich real estate; 9% of Munchner Ruckversicherung, the world's largest reinsurance company; 6% of Allianz Insurance Corp., West Germany's biggest; interests in breweries, wineries, banking, construction, and more.** The spectacular rise in the value of building lots in and around Munich has boosted the von Finck holdings by some 30% in the past year. The family decided to close their Löwenbräu breweries in the U.S. and export again from Bavaria.
KICHINOSUKE SASAKI, 57	Tokyo JAPAN	▨	**$2.3**	**Togensha, a real estate firm.** He dabbled in development while practicing medicine, then founded Togensha in 1971 to devote his full attention to real estate. Sasaki's buildings are easily identified, especially at night, by a pink neon peach and the word "Togensha" in Roman letters at the top.
EDMUND VESTEY, 57 **SAMUEL, LORD VESTEY**, 48	Gloucestershire ENGLAND	▨	**$2.3**	**Union International PLC, privately owned multinational with some 250 companies in 25 countries, including British Beef, New Zealand's Weddel Crown Corp., and Hong Kong Refrigerating Co.** These cousins control a meat and property empire. Their grandfathers, who were brothers, pioneered the shipping of refrigerated meat from Argentina, Russia, and China to the British masses. Samuel plays polo with the Prince of Wales, and Edmund is joint master of the Puckeridge and Thurlow Foxhounds.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
JOHN T. DORRANCE III, 45 **BENNETT DORRANCE,** 43 **MARY ALICE DORRANCE MALONE,** 41	Devils Tower WYOMING Paradise Valley ARIZONA Coatesville PENNSYLVANIA	▨	**$2.2**	**31.5% of Campbell Soup Co.** When John T. (Jack) Dorrance Jr. died in April, nearly a third of the company passed into the hands of his three children, who each inherit an equal share of the trust established by Jack's father, the inventor of condensed soup. Add the shares of a 1987 voting trust held by six nieces and nephews, and the Campbell Soup kids control 58.2% of the company. The stock has jumped since April on speculation that they might consider selling. John T. III (Ipy) owns a cattle ranch in Wyoming. Jack's art collection, which includes 250 paintings by artists such as Monet, Renoir, Gauguin, and Picasso, goes on sale at Sotheby's next month.
KARL HEINZ KIPP, 65	Arosa SWITZERLAND	N	**$2.2**	**Wealth comes from sale of 26 Massa variety stores in Germany.** Kipp, who bought the Alfred Massa company in 1948, then switched from textile wholesaling to retailing in the Sixties, sold his chain in 1986 to have more time for his passion: Swiss hotels. The price he received for his stores was $600 million, plus $1.6 billion to be paid over 30 years. Cash in hand, he bought two hotels in the resort town of Arosa, the Hotel Carlton in St. Moritz, and the Hotel Eden Roc in Ascona, more for pleasure than profit. Kipp also bought four high-rise office buildings in Manhattan.
TED ARISON, 65	Miami FLORIDA	▨	**$2.1**	**69% of Carnival Cruise Lines; Ensign Bank; Miami Heat, the city's first NBA team; real estate and financial services.** "If they could see you now," sings chirpy Kathie Lee Gifford on a television spot for Carnival. She might be talking to Arison, an Israeli immigrant who took on $5 million in debt when he bought out his partner in the cruise business back in 1974. Heavy advertising aimed at the common folk promoted the "Fun Ship" as a destination in itself. Carnival is the largest and fastest-growing cruise line in the world. Son Micky, 40, now runs the show.
GRETE SCHICKEDANZ, 73	Fürth WEST GERMANY	▨	**$2.1**	**Owns Quelle, Europe's largest mail-order catalogue business.** After World War II bombs destroyed her husband's textile firm and he, a member of the Nazi Party, lost his business license for five years, Schickedanz opened a small retail-cum-mail-order shop in Hersbruck. Now chronic traffic congestion in West Germany prompts many shoppers to buy from her catalogues. Schickedanz retired in 1987 after a heart attack in Spain. While her son-in-law runs the business, she concentrates on her grandchildren.
RINJI SHINO, 80	Osaka JAPAN	▨	**$2.1**	**Bus, shipping, and real estate companies in Japan; premodern Japanese paintings and European antiques; forest near Paris; winery in Médoc.** Much of Shino's wealth dates back generations, but he gets credit for developing his father's companies into a leisure industry empire in western Japan. Shops for art on his annual trips abroad. A man obsessed with France, Shino had his Country Club de Sennan designed from photographs he took of golf courses on his first trip there some 30 years ago. A horse and 16th-century French carriage wander the club, providing transportation for those in no particular hurry.
ANTON CASPAR RUDOLPH DREESMANN, 66 **and family**	Laren NETHERLANDS	▨	**$2.0**	**Major shareholder, Vendex International, a family-owned holding company for European department and clothing stores, including Vroom and Dreesman, with interests in U.S. companies B. Dalton Bookseller and Dillard Department Stores.** In late 1987 Dreesman, the autocratic but ailing chief executive, surprised the Dutch business community by choosing as a successor Arie van der Zwan, a former leading member of the extreme left-wing faction of the Dutch Socialist Party. This year, while Dreesman was confined to a sickbed, Van der Zwan announced a major reorganization and the firing of hundreds of employees. "From my grave I saw them sell out the company. I have risen from the grave, and I'm going to stop them," declared Dreesman. Van der Zwan was sacked and a new successor appointed.
INGVAR KAMPRAD, 63 **and family**	Lausanne SWITZERLAND	▨	**$2.0**	**Control of IKEA, a home furnishings company, through a tax-exempt foundation in the Netherlands; real estate; banking.** As a boy in his native Sweden, this farmer's son would buy cheap watches, then sell them for five times what he paid. Revolutionized the European furniture industry by selling inexpensive, unassembled items in easy-to-carry packages. Fled Sweden's 80% personal income tax. Notoriously tight with his money, Kamprad says he's slowly changing those ways: "I seldom wash disposable plastic glasses anymore."
ESTÉE LAUDER, 81 **and family**	New York NEW YORK	▨	**$2.0**	**100% of Estée Lauder Inc.** The child of poor immigrants, she began selling her Hungarian uncle's "magic cream" potion. A determined peddler of beauty products during the Depression, Estée hounded department stores until they agreed to carry her wares. Last year's take: some $1.4 billion worldwide. Lauder's brands (Clinique, Aramis, Youth Dew) are popular picks of their respective sexes. One son works for Mom—Leonard, 56, is chief executive officer. The other son, Ronald, 45, a candidate for mayor of New York City, heads Lauder Investments.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
LIEM SIOE LIONG, 72	Jakarta INDONESIA	▨	**$2.0**	**24% of Bank Central Asia, Indonesia's largest private bank; 67.6% of Bogasari Flour Mills; 45% of Indocement, the largest cement company; 69% of First Pacific Holdings, a Hong Kong–based finance and trading conglomerate.** Born in 1916 to a peasant family in the tiny port of Futsing in southern China, Liem emigrated to Java in 1938 and worked for his uncle in a small trading company. During Indonesia's struggle for independence, 1945-49, he supplied the resistance with food, medicine, and arms. Suharto, a young officer he befriended, later became President of Indonesia. As a result, he enjoys monopolies on cloves, cement, and wheat flour, among other things.
SHEIKH RASHID BIN SAID AL MAKTOUM, 79 **and family**	DUBAI	▨	**$2.0**	**Ruler of an oil-rich land; extensive foreign investments.** No distinction can be discerned between the state's finances and those of the leading branch of the Al Maktoum family. During difficult political times Dubai has maintained liberal social policies and has welcomed foreigners. As a result, Dubai is now the tourist center of the Arabian Peninsula and many companies have relocated headquarters from Bahrain or Kuwait to Dubai. Sheikh Rashid's four sons have run the state since his stroke several years ago.
ROGER MILLIKEN, 73 **GERRISH MILLIKEN,** 72	Spartanburg SOUTH CAROLINA Greenwich CONNECTICUT	▨	**$2.0**	**Controlling interest in Milliken & Co.; minority stake in Mercantile Stores Co.; 100,000 acres of forest land in Maine.** Grandfather Seth co-founded a Maine-based dry goods store in 1865 and then expanded the business into manufacturing. The closely held company is a dominant force in the textile industry. The brothers—Roger is chairman, Gerrish is retired—control the business through numerous family trusts.
DAVID PACKARD, 77 **and family**	Los Altos Hills CALIFORNIA	▨	**$2.0**	**16.2% of Hewlett-Packard.** With Stanford crony William Hewlett, Packard started an instrument business out of his garage in 1939; last year H-P had revenues of nearly $10 billion. He was deputy secretary of defense in the Nixon Administration. He plans to give away most of his stock to the David and Lucile Packard Foundation. Much of the money will go toward child health care, scientific research, and education. Widowed; three daughters and one son.
SULIMAN ABDUL-AZIZ AL RAJHI, 67 **and family**	Riyadh SAUDI ARABIA	▨	**$2.0**	**50% of Al Rajhi Banking & Investment Corp., real estate, agricultural enterprises.** Suliman and his four brothers made their fortune from a money exchange operation. Tens of thousands of devout Muslims made deposits with Al Rajhi Co. for Currency Exchange & Commerce without accepting interest, which the Koran condemns as usury. So the Al Rajhi family had billions of dollars in deposits to invest as they saw fit.
EDMOND SAFRA, 57	Geneva SWITZERLAND	N	**$2.0**	**33% of Republic National Bank of New York; through that company plus additional holdings, 68.6% of Safra Republic Holdings SA in Luxembourg, with interests in Republic National banks in Switzerland, France, Guernsey, and Gibraltar; Banque du Crédit National in Beirut.** Edmond Safra's father, Jacoob, left his native Aleppo in northwest Syria for Beirut, where he founded the Banque du Crédit National, married his cousin, and had eight children. In 1950 the entire clan moved to Brazil, where Edmond's brothers Moises and Joseph run Banco Safra. A Brazilian citizen, Edmond took over the Beirut operation, concentrated on building business in the U.S. and Europe, and moved to Geneva. In 1979 he wed Brazilian Lily Monteverde-Watkins, who brought to the marriage three children and her late husband's $230 million appliance group, Ponte Frio.
JOHN RICHARD SIMPLOT, 80	Boise IDAHO	▨	**$2.0**	**100% of J.R. Simplot Co., one of world's largest potato processors, and producer of fertilizer, beef cattle, frozen fruits and vegetables; 17.5% of Micron Technology.** The Simplot Co. founder and chairman of the board still drops in on plants to chat with workers and sample his spuds. More than half of all McDonald's French fries are supplied by his company, so Simplot breakfasts regularly at the golden arches after his four-mile morning stroll. The billionaire farmer, who grew up in a tiny log cabin and dropped out of school in the eighth grade, also has a passion for chips. Not potato chips, but computer chips. In 1978 he invested close to $20 million in "gamble money" to help start up the Boise-based semiconductor manufacturer Micron Technology.
DONALD BREN, 57	Newport Beach CALIFORNIA	▨	**$1.9**	**92% of Irvine Co., with 65,200 largely undeveloped acres in Orange County, California.** Bren and other investors took over Irvine Co. 12 years ago. In 1983 he borrowed $500 million and bought out most of his partners. He's in the middle of a lawsuit involving the value of the shares owned by the founder's great-granddaughter.
BRUCE R. McCAW, 43 **CRAIG O. McCAW,** 40 **JOHN E. McCAW JR.,** 38 **KEITH W. McCAW** 35	Kirkland WASHINGTON	▨	**$1.9**	**30% of McCaw Cellular Communications, a Kirkland-based cellular telephone firm.** When the father died in 1973, he left then 23-year-old Craig in charge of a small cable television operation. Two years ago the brothers got out of the cable business for $755 million in order to concentrate on cellular phones. The market value of such companies has taken off in the five years they've been around. British Telecom bought 20% of McCaw in June. The McCaws recently made a bid for LIN Broadcasting.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
SULIMAN SALEH OLAYAN, 70	Riyadh SAUDI ARABIA	▨	**$1.9**	**Controls Olayan Group, which manages portfolio including 7% of First Chicago Corp., 5.3% of Transamerica, 5% of Occidental, and 1% of Chase Manhattan and some 25 companies in real estate, food importing, transportation, insurance, and construction.** Son of a Medina spice merchant who died when Olayan was 4, he was educated at the American Mission School in Bahrain and worked as an interpreter for Aramco. In 1948 he borrowed $4,000 and bought a partnership in a small building outfit. Olayan fancies American companies and clothes; he's also married to an American.
TAMESABURO FURUKAWA, 99	Nagoya JAPAN	▨	**$1.8**	**Nippon Herald Films, which distributes foreign films and owns a chain of movie theaters in Japan; the Herald Group of about 50 entertainment-related companies, including golf courses, ski slopes, restaurants.** The oldest billionaire was an apprentice to a jewelry maker at the age of 14, then went out on his own. When he skidded close to bankruptcy during a national depression, he decided the movies would be foolproof: simple entertainment in good times, an escape in bad. Furukawa is still chairman of the film company, which he runs with the help of his two grandsons.
WILLIAM R. HEARST JR., 81 **RANDOLPH A. HEARST,** 73	New York NEW YORK San Francisco CALIFORNIA	▨	**$1.8**	**40% of Hearst Corp. (14 consumer magazines, 14 newspapers, six TV stations, seven radio stations, and two book publishers).** Their flamboyant father built the largest U.S. newspaper chain. Although William Jr. bears the title of editor-in-chief and Randolph chairman, neither son runs the corporation. Father did not want them to. Only five of the 13 directors who oversee the trust that holds 100% of the company's stock are family members. And while about 15 Hearsts work at the company, William Jr.'s son, William Randolph Hearst III, 39, is the only one with responsibility for an operation, serving as publisher of the San Francisco *Examiner.*
SAMUEL JAYSON LEFRAK, 71	New York NEW YORK	▨	**$1.8**	**New York and New Jersey real estate, including 94,000 apartments; oil and gas ventures in Texas and Oklahoma; impressionist art; an entertainment company.** New York's largest private residential landlord, LeFrak owns Gateway Plaza, Lefrak City, and Newport, a $10 billion development across the water from Manhattan in New Jersey. At the United Nations he proposed mining ocean seabeds for diamonds, gold, platinum; proceeds would go to build housing for the world's homeless. He and Ethel, his wife of 48 years, have four children.
JACQUES MAUS, 59 **BERTRAND MAUS,** 57	Geneva SWITZERLAND	N	**$1.8**	**Maus Frères, the largest retail chain in Switzerland, with 78 department stores, 70 boutiques, 22 hardware stores, supermarkets, and restaurants; controlling interest in Le Printemps and other department store chains in France; art.** Share their empire and $3.6 billion fortune with their cousins the Nordmanns (below).
KEITH RUPERT MURDOCH, 58	New York NEW YORK	▨	**$1.8**	**Controls 46% of News Corp., media empire including seven TV stations, 24 magazines, and 130 newspapers in Australia, Britain, Hong Kong, and the U.S.** The Aussie sultan of sensationalism continues apace his grand scheme to extend News Corp.'s global reach. In Europe last year he relaunched Sky Channel with increased programming. Married to Anna, a writer. Four children.
GERARD NORDMANN, 59 **PHILIPPE NORDMANN,** 57	Geneva SWITZERLAND	N	**$1.8**	**See entry on the Mauses, above.** The Maus-Nordmann family managed to remain out of the public eye during decades of rapid expansion, until P.A. Bergner, Maus Frères' U.S. subsidiary, bought Carson Pirie Scott in Milwaukee for $453 million. For the past two years Bergner has boasted the highest return on stockholders' equity in the U.S. retail industry. Maus Frères Chairman Philippe Nordmann has been named "Genevan of the year" for 1988 for his contributions to AIDS research.
HAROLD C. SIMMONS, 58	Dallas TEXAS	▨	**$1.8**	**88% of Valhi, a Dallas-based company with interests in sugar, chemicals, timber, and fast-food restaurants; real estate.** The corporate raider grew up in Golden, Texas, one of three sons of schoolteachers. After graduating from the University of Texas, where he studied economics, he borrowed mightily to acquire drugstores. In 1973 he sold them for $50 million to Jack Eckerd Corp., and two years later his shares had lost three-quarters of their value. But Simmons struck it rich with Valhi when he started accumulating an eclectic assortment of industrial companies, including Amalgamated Sugar and NL Industries. Simmons has recently raised his stakes in Lockheed, Inland Steel, Paccar, Phelps Dodge, and Chrysler. Married to his third wife, Annette; four daughters.
LESLIE H. WEXNER, 52	Columbus OHIO	▨	**$1.8**	**28.9% of the Limited: 3,055 retail clothing stores, including Lane Bryant, Henri Bendel, Victoria's Secret, Abercrombie & Fitch; 4.5% of Sotheby's Holdings.** Wexner borrowed $5,000 from an aunt in 1963 and opened a sportswear store. Today the Limited is one of the nation's largest retailers in women's apparel. He has a passion for collecting art and houses, owning homes in Manhattan and Palm Beach. A bachelor, Wexner says he's too busy traveling to settle down.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
GIOVANNI AGNELLI, 68 **and family**	Turin ITALY	▨	$1.7	**35% of Fiat Group (1988 sales: $34 billion): autos, insurance, department stores; publishing; foods, telecommunications; and much more.** Known as *l'Avvocato* (the Lawyer), Gianni Agnelli controls Italy's largest private industrial group. Agnelli interests dominate the Italian stock market. Fiat employs 1.3% of all Italian workers. His grandfather founded Fiat in 1899. Last year was Fiat's best ever, and the company was listed on the New York Stock Exchange. Gianni owns an elegant collection of modern Italian art and three homes—a Park Avenue apartment, a chalet in St. Moritz, and a 19th-century mansion outside Turin. Two children.
MARVIN DAVIS, 64	Beverly Hills CALIFORNIA	▨	$1.7	**100% of Davis Oil Co.; holdings in real estate, entertainment.** Davis started out as a wildcatter in Denver, then followed the footlights to Hollywood. He scored big by buying and then selling Twentieth Century–Fox, and bought Spectradyne Inc., a pay-per-view television service. His new game is airlines. After a profitable pass at NWA, he has offered $5.4 billion for UAL. Davis used to sustain his 300 pounds with pastrami and cheesecake imported from New York City's Carnegie Deli. Now he's opened his own branch in Beverly Hills. Married, five children.
ROBERT MAXWELL, 66	London ENGLAND	▨	$1.7	**52% of Maxwell Communication PLC, which owns New York–based Macmillan; Mirror Group Newspapers; Pergamon group of professional and financial services.** Last year Maxwell (born Jan Ludwig Hoch in Czechoslovakia) clinched his first major publishing deal in the United States with the $750 million acquisition of Dun & Bradstreet's Official Airlines Guide division. Before the week was out, he had also won the bitter battle for Macmillan Publishing, which is now being run by Kevin, one of Maxwell's seven children. Within hours, Maxwell stunned the City by announcing that he was moving "from heavy business into light," selling off printing operations to concentrate on publishing.
DONALD J. TRUMP, 43	New York NEW YORK	▨	$1.7	**Real estate: hotels, casinos, luxury apartments; stockholdings; air shuttle.** "My name sells," says Trump, who has assigned his moniker to virtually all his properties—Trump Tower, Trump Plaza, Trump Castle, the Trump Shuttle. (Manhattan's Plaza Hotel is the notable exception.) The latest in his assemblage: the Tour de Trump, a bike race that weaves through the Eastern seaboard. Trump's not shy about his wealth; he says it's around $5 billion. Well, he always did think big. Some fresh Trump news? He is as charitable as he is flashy. Last year he gave millions to America's veterans, AIDS research, and United Cerebral Palsy. Married to Ivana. Three children.
JACK KENT COOKE, 76	Middleburg VIRGINIA	▨	$1.6	**Cooke Cablevision; Los Angeles *Daily News*; Washington Redskins; New York's Chrysler Building.** The Canadian-born cable TV maverick was a struggling door-to-door encyclopedia salesman back in the 1930s. Naturalized in 1960. Built his empire by shrewd purchases of radio stations, a newspaper, a thoroughbred horse racing operation, a square block of midtown Manhattan, and cable TV systems. Of the Redskins, Cooke says: "The greatest hobby a man could have." A $42 million divorce settlement with his first wife broke records in 1979. Two middle-aged sons, John and Ralph, from first marriage and an infant daughter from third. A financial settlement with wife No. 3 has yet to be reached. Their 73-day marriage ended in divorce last year.
CHARLES F. FEENEY, 58	London ENGLAND	N	$1.6	**40% of Duty Free Shoppers Group Ltd., world's largest duty-free retailer; General Atlantic Corp., owner of retail shops, hotels, magazines, software, real estate, oil and gas.** Founded Duty Free Shoppers in Hong Kong with classmate Robert Miller (also a billionaire) four years after graduating from Cornell University's School of Hotel Administration. Feeney flies economy-class and has reportedly been known to use safety pins to hold his pants up.
ERNEST GALLO, 80 **JULIO GALLO,** 79	Modesto CALIFORNIA	▨	$1.6	**100% of E.&J. Gallo Winery.** Sibling differences soured into a family feud between winemakers Ernest and Julio and younger brother Joseph, a cheesemaker. The elders successfully sued to keep the Gallo name off Joseph's cheese. Back at the vineyard, jug wines are in decline—victims of a maturing American palate—but the Gallos still make about one of every four bottles of wine sold in America. Four children between them.
REINHARD MOHN, 68	Gütersloh WEST GERMANY	▨	$1.6	**90% of Bertelsmann AG: the world's second-largest media conglomerate owns the RCA music operations, Doubleday, Dell, Bantam Books, publishers in Germany, printers, cable and satellite TV, movies.** It was a banner year for the book clubs, magazines, printers, and music and video departments. The company made no major acquisitions, but with 1992 approaching, it is shopping around. Mohn, grandson of founder Carl Bertelsmann, studied engineering as a prisoner of war in the U.S. and rebuilt the company after the Nazis destroyed it. Now he supports three major German political parties.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
DONALD W. REYNOLDS, 82	Las Vegas NEVADA	▨	**$1.6**	**Donrey Media Group; includes 13 newspapers, five cable television stations, 10,400 outdoor billboards.** The publisher, fired from his first two jobs in newspaper ad sales, built a media empire buying small-town newspapers. He donated $2.5 million to the University of Nevada at Reno for a journalism school in his name. Reynolds owns seven homes, a well-appointed 727 jet, a catfish farm in Duckwater, Nevada, and a former bordello, turned restaurant, in Arkansas.
LAURANCE S. ROCKEFELLER, 79 **DAVID ROCKEFELLER,** 74	New York NEW YORK	▨	**$1.6**	**Joint investments include family trusts, stocks and bonds, real estate, and venture deals.** The Rockefeller wealth is becoming dispersed as the clan grows. But David and Laurance, the surviving children of John D. Jr., still draw income from trusts started by their father in 1934. In the next generation—22 great-grandchildren of John D. Sr., founder of Standard Oil—the dynastic torch is carried by David's son David Jr., chairman of the Rockefeller Brothers Fund, a family outlet for philanthropy.
SHOJI UEHARA, 61 **and family**	Tokyo JAPAN	▨	**$1.6**	**31% of Taisho Pharmaceutical Co.** Spartan Shoji married into the Uehara family and was adopted as son and heir to Shokichi Uehara's drug business. In 1986 mother Sae founded the Uehara Life Sciences Foundation with 20 million Taisho shares. Shoji plans to give more: "That is better than having it disappear as inheritance tax."
FABIO BERTARELLI, 56 **and family**	Geneva SWITZERLAND	N	**$1.5**	**86% of Ares Serono Holding, a pharmaceuticals and diagnostics company.** Fabio's lifelong dream was to control the Italian company his father, Pietro, worked for as chief executive. Resistance came from the firm's founder, Cesare Serono, who had become lax but refused to give up control; the Vatican, which owned 40% of the shares until 1958; and speculator Michele Sindona, who bought the Vatican's interest and artificially inflated the stock price. Fabio gained control gradually, turned the company around, and moved headquarters to Geneva. He also expanded the company, which is now a leading producer of natural drugs. Ares Serono supplies half the world market in fertility drugs. Bertarelli owns a cattle ranch in Tucson, Arizona.
LILIANE BETTENCOURT, 66	Paris FRANCE	▨	**$1.5**	**25% of L'Oréal, maker of hair colorings, Lancôme cosmetics, Anaïs Anaïs perfume; about 4% of Nestlé; more than 30% of Cosmair.** Bettencourt's fortune comes largely from the inheritance left by her father, Eugène Schuller, a brilliant chemist who invented several brands of paints and founded L'Oréal, the world's largest cosmetics company. Liliane's husband, André, is a former Gaullist minister.
AUGUST A. BUSCH JR., 90	St. Louis MISSOURI	▨	**$1.5**	**12.5% of Anheuser-Busch Cos. (1988 sales: $8.9 billion), which includes breweries, Campbell Taggart bakery, aluminum can manufacturer.** Retired from the company his grandfather started in the 1800s, honorary chairman "Gussie" lives on a 281-acre farm with hundreds of exotic animals, including African elephants, antelopes, and the Vietnamese pot-bellied pig. Breeds Clydesdales, the famous furry-footed draft horses that pull the Budweiser wagon. August III, Gussie's eldest son (ten of his 11 children are living), runs the company, which has 42% of the domestic beer market. Gussie is still chairman of the St. Louis Cardinals baseball team, which he bought in 1953. Divorced twice, widowed twice.
HARRY B. HELMSLEY, 80	New York NEW YORK	▨	**$1.5**	**Real estate, including hotels and a stake in the Empire State Building.** The son of a dry goods salesman, Harry chose real estate—his granddad's career. During his seven-decade stint, Helmsley assembled an impressive portfolio of commercial properties, hotels, and apartment buildings. In April, Helmsley and his wife, Leona, were indicted on tax evasion charges for allegedly disguising as a business expense some $4 million in renovations to their Greenwich, Connecticut, mansion. Stroke-stricken, Harry was excused from the trial, which is still in progress.
SHI H. HUANG, 63	Taipei TAIWAN	N	**$1.5**	**63% of San Yang Industrial Corp., manufacturers of cars and motorcycles under license from Honda.** His father built a bicycle repair shop into one of Taiwan's leading auto and motorcycle makers. Near death in 1979, the elder Huang called Shi, a medical doctor who studied and practiced in the U.S. and Japan for 26 years, back to Taiwan to take the company helm. Shi resigned his post at Washington University & Veterans Administration Hospital in St. Louis and brushed up on his Mandarin Chinese. San Yang has steadily increased its market share under his leadership.
KANICHIRO ISHIBASHI, 69 **and family**	Tokyo JAPAN	▨	**$1.5**	**16% of Bridgestone Corp.** He's the son of Bridgestone founder Shojiro Ishibashi, who was so smitten with Western ways that he brought his children up to eat with forks as well as chopsticks and christened his tire company with a quasi-English translation of his own name—"ishi" means stone and "bashi" means bridge. Kanichiro took over in 1963. Now retired, he still has influence as honorary chairman. He broke with tradition by not naming his son to succeed him.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
GEORGE STAVROS LIVANOS, 60	London ENGLAND	N	**$1.5**	**George S. Livanos, an international shipping company; cash; art.** Heir to the largest Greek fleet of the 1950s, he likes to travel by Concorde and is well-known in Régine's and other nightclubs around the world. George's sister Tina was Aristotle Onassis's first wife. His other sister, Eugenia, married shipping tycoon Stavros Niarchos. Later the divorced Tina married Niarchos herself.
JOSÉ ERMÍRIO DE MORAES JR. 62 **ANTÔNIO ERMÍRIO DE MORAES,** 61 **MARIA HELENA DE MORAES,** 58 **ERMÍRIO PEREIRA DE MORAES,** 57	São Paulo BRAZIL	▨	**$1.5**	**Indústrias Votorantim, Brazil's largest non-government-owned industrial group, comprising textile, cement, paper, steel, chemicals, and mining businesses.** Votorantim was founded in 1918 by Portuguese immigrant Antonio Pereira Ignácio, who bought a textile factory at an auction of a failed bank's assets. His son-in-law José Sr. turned the company around during the slump that followed the Wall Street crash. José's sons now run Votorantim. The disheveled and temperamental Antônio is the most politically active member of the family. But this year he turned down the job of Finance Minister and refused to run for President in Brazil's first free presidential election in 29 years. He says he cannot reconcile his own ethical standards with those of politicians.
DAVID H. MURDOCK, 66	Los Angeles CALIFORNIA	▨	**$1.5**	**100% of Murdock Development Co., through which he owns office buildings and commercial property; Flexi-Van Corp.; 22.9% of Castle & Cooke.** Murdoch made a fortune as a builder in Phoenix and then lost most of it in 1964 when the city's real estate market tanked. Avoided the eggs-in-one-basket syndrome his second time around by building in diverse markets. A shrewd buyer and seller of companies, he has scored on such acquisitions as Iowa Beef Processors and Cannon Mills. Unwinds at his 1,500-acre ranch north of Los Angeles. Widowed. Two sons.
SHEIKH ZAYED BIN SULTAN AL NAHAYAN, 73	ABU DHABI	▨	**$1.5**	**Oil; investments include U.S. Treasury bond futures.** A genuine desert Arab, the ruler of Abu Dhabi and President of the United Arab Emirates was born in remote Al Ain, where the Jahili fortress and adjoining camel market built by his father in 1910 still stand. Zayed has backed efforts to reintroduce once teeming herds of gazelle to his land. His wife, Sheikha Fatima bint Mubarak, president of the Abu Dhabi's Women's Society, is intent on developing the role of women in the country.
MAJA SACHER-STEHLIN, 93 **PAUL SACHER,** 83 **and family**	Frenkendorf SWITZERLAND	▨	**$1.5**	**60% of Hoffmann–La Roche.** The drug company's stock reached an intoxicating high of $150,000 a share in April. Paul Sacher took over Hoffmann–La Roche in 1945 after marrying Maja, the young widow of Emmanuel Hoffmann, who was killed in a car crash. Sacher is allegedly the driving force behind the recent restructuring of Hoffmann–La Roche, but his real passion is music. The son of a gardener, he has an ironic aversion to dirt: He requires that all the servants in the Sacher household wear white gloves.
LEONARD NORMAN STERN, 51	New York NEW YORK	▨	**$1.5**	**100% of Hartz Group: pet supply company, real estate, the *Village Voice* and *7 Days*.** Got an MBA in 1959 at age 21 and took over his father's bird and seed company, building it into a leader in the pet supply business. Branched into publishing and real estate, including 35 million square feet of commercial and residential space in New Jersey's Meadowlands. He began buying a swamplike parcel there in the 1970s. Today he owns about 1,500 acres. A tycoon-about-town in New York City, he helped build housing for the homeless and gave $30 million to New York University's business school, which took his name. Divorced and remarried. Three children.
BARON HANS HEINRICH THYSSEN-BORNEMISZA, 68	Lugano SWITZERLAND	▨	**$1.5**	**Thyssen-Bornemisza Group (sales: $3 billion), with 200 companies in information systems, shipping, automotive products, glass manufacturing, and more; vast art collection; real estate.** Baron Heini, as he's known to friends, owns an extraordinary collection of over 1,400 paintings, worth an estimated $1 billion. The baron is loaning 787 paintings to Madrid for a period of ten years.
WALTER H. ANNENBERG, 81	Wynnewood PENNSYLVANIA	▨	**$1.4**	**Proceeds from 1988 sale of Triangle Publications, including *TV Guide*; Annenberg Collection, impressionist and post-impressionist paintings; six million shares of General Motors.** In 1953 this former ambassador to the Court of St. James's lingered at newsstands in New York, Chicago, and Philadelphia and asked people why they bought local television guides: "People said they liked having a copy to leave on top of the set." He rolled out *TV Guide* in 18 cities. One daughter.
RAUL GARDINI, 57 **and family**	Ravenna ITALY	▨	**$1.4**	**Ferruzzi Group, Italy's No. 2 company (1988 sales: $11.7 billion), with interests in sugar, grain trading, construction, pharmaceuticals, insurance, and food; through Ferruzzi, 42% of Montedison, a chemicals giant.** As a boy, Gardini hitched his bike to the back of Serafino Ferruzzi's car for some help with a hill on the way to school; later he married Ferruzzi's daughter Ida. When Ferruzzi died in 1980, Gardini took over the company. The Chicago Board of Trade recently accused Gardini of trying to corner the U.S. soybean market. Ferruzzi denies any wrongdoing.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
SIR JAMES GOLDSMITH, 56	London ENGLAND		**$1.4**	**Cash; 67% of General Oriental Investments, a Cayman Islands–registered group that has 37.4% of Anglo Leasing; through Anglo, 29.9% of Ranks Hovis McDougall, a British food products company.** A decade ago Jimmy Goldsmith told a packed audience of businessmen in London that Britain was basically finished. He betook himself to France and America, where he wheeled and dealed. In 1989, after years of partial exile, he returned to the British financial scene. Among other things, he recently made a $21 billion takeover bid for BAT Industries, along with Jacob Rothschild and Australian Kerry Packer (see below).
RAY HUNT, 46 **and family**	Dallas TEXAS		**$1.4**	**100% of Hunt Oil Co.; real estate; other investments.** H. L. Hunt, who thought he had terrific genes, had 15 children with three women. His union with second wife Ruth produced Ray and his three sisters, known as H.L.'s "second" family. When daddy died, he left Ray as executor of his estate. Ray later split up the empire with his half-brothers, but retained control of the flagship Hunt Oil.
MASATOSHI ITO, 65 **and family**	Tokyo JAPAN		**$1.4**	**12.4% of Ito-Yokado stores; includes majority ownership of 7-Eleven Japan and Denny's Japan.** When his older brother died in 1956, Ito took over the small dry goods store his uncle had founded. He introduced American-style distribution in Japan. The "superstores" make his chain the most profitable in the country.
LAWRENCE, LORD KADOORIE, 90 **HORACE KADOORIE,** 88 **MICHAEL KADOORIE,** 49	HONG KONG		**$1.4**	**68.9% of Hongkong & Shanghai Hotels; 25% of China Light & Power Co.; substantial interest in Schroeder Wagg bank; 20% of Hong Kong Carpet.** The Iraqi Jewish Kadoorie family moved from Baghdad to Shanghai in the late 1800s, then to Hong Kong in 1949. Unlike the Chinese in Hong Kong, who live fairly simply and quietly, Lawrence's son Michael bops around in fast cars, boats, and small planes.
GENSHIRO KAWAMOTO, 57	Tokyo JAPAN		**$1.4**	**Marugen Co.: investments in real estate, including prime properties in Tokyo and Honolulu.** Kawamoto took his parents' prophetic advice and invested in Japanese land—35 years ago. Now he owns scores of buildings in Japan, Hawaii, and California; most are residential or house small pubs. A bachelor, he says, "Clubs and bars are necessary for escape. Without them the divorce rate would no doubt rise."
KERRY PACKER, 52	Melbourne AUSTRALIA		**$1.4**	**Consolidated Press Holdings, Australia's largest magazine publisher, with 70% of the market and investments in textiles, chemicals, livestock, construction, property, financial services.** A polo player who likes to shop for ponies in Argentina, Packer has been quietly expanding the empire his tyrannical father left him when the elder Packer died of pneumonia in 1974. He bought 48% control of Australian National Industries, one of Australia's largest engineering firms, for $568 million. And in July, Packer emerged as one of a trio, along with Sir James Goldsmith and Jacob Rothschild, making a bid for Britain's BAT Industries. Packer has also plowed money into vast cattle stations in Australia's Northern Territory and Queensland.
LUCIANO BENETTON, 54 **GIULIANA BENETTON,** 52 **GILBERTO BENETTON,** 48 **CARLO BENETTON,** 45	Treviso ITALY		**$1.3**	**100% of Benetton (1988 sales: $1.1 billion), designers and manufacturers of casual clothes sold worldwide in franchised stores.** The owners want their United Colors of Benetton to span the globe: Already 5,483 shops in 79 countries sell Benetton sweaters, perfume, underwear, sunglasses, and watches. Sheets and towels arrive soon. Responding to a threat from Oriental textile manufacturers that have cut into the domestic Italian industry, the Benettons decided to fight fire with fire and market in Japan and Indonesia. They also want to put a Benetton sweater on every Russian.
EDWARD J. DEBARTOLO SR., 80 **EDWARD J. DEBARTOLO JR.,** 42 **MARIE DENISE DEBARTOLO**	Youngstown OHIO	N	**$1.3**	**Edward J. DeBartolo Corp., owner of malls, Pittsburgh Penguins, racetracks, real estate, part owner of Higbee's department stores, interest in Federated Department Stores.** DeBartolo Sr. pronounced downtown dead but saw signs of life in suburbia. The "Plaza King" buys undeveloped land cheap, then builds malls on it when communities invariably spring up nearby. The elder DeBartolo often visits his malls, pointing out errant candy wrappers or cigarette butts to managers. He sleeps four hours a night, works at least 14 hours a day, six days a week. He takes it easy on Sundays, though, and works only seven hours. Eddie Jr. owns the Super Bowl champion San Francisco 49ers.
JOSEPHINE FORD, 66 **WILLIAM CLAY FORD,** 64 **and family**	Detroit MICHIGAN		**$1.3**	**25% of voting stock of Ford Motor (1988 sales: $92 billion); art; pro football franchise; real estate.** Surviving grandchildren of automotive magnate Henry Ford, Josephine (known as Dodie) and William Clay control the biggest remaining piece of the Ford fortune. Last year they collected $34 million in Ford dividends. William Clay retired as vice chairman from Ford Motor in May, but heads trust that votes family-owned stock, some 35 million shares at last count. Four children each. Dodie displays enough sense of fun to surprise her offspring with live lobsters in their beds.

N NEWCOMERS AMERICANS EUROPEANS ASIANS OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
GORDON PETER GETTY, 55	San Francisco CALIFORNIA	▨	**$1.3**	**Trusts, inheritance, investments.** J. Paul Getty's quixotic fourth son spends his days composing serious music and only occasionally dabbles in business. He calls working 9-to-5 "plow horse" duty. Sold the family's 40% stake in Getty Oil to Texaco for $4 billion, prompting lawsuits from Getty relatives and leading to the mammoth Texaco-Pennzoil litigation. He and publisher-socialite wife Ann have four sons.
KING HASSAN II, 60	Rabat MOROCCO	▨	**$1.3**	**Real estate, including palaces in Morocco and properties in New York, New Jersey, and Paris.** The 17th sovereign of Morocco was educated at the University of Bordeaux, speaks better French than Arabic, lives in great luxury, and is said to have *baraka*, or a charmed life. He has survived many assassination attempts, the bloodiest of which, in 1971, left 98 of his guests dead.
ALFRED HENRY HEINEKEN, 65	Noordwijk NETHERLANDS	▨	**$1.3**	**About 25% of Heineken brewery.** Freddy Heineken, grandson of the founder, retired in 1989. This summer he wooed the inhabitants of St. Moritz, where a local committee opposed Freddy's plans to bulldoze a historic villa. Faced with a referendum, Freddy rented a bus and shuttled some of the townspeople to the villa to show them just how unlivable it really was. He won 1,200 votes to 200, and a few days later a wrecking crew had already demolished half the building before authorities put a stop to it—Freddy forgot to get the required government permit.
ALICE SHEETS MARRIOTT, 81 **JOHN WILLARD MARRIOTT JR.,** 57 **RICHARD EDWIN MARRIOTT,** 50	Washington D.C. Chevy Chase MARYLAND Potomac MARYLAND	▨	**$1.3**	**Some 25% of Marriott Corp. (about 500 hotels; 1,100 restaurants); 80% of First Media Corp.** Sales topped $7 billion last year for the family-run hotel chain, which began in 1927 as a nine-stool soda shop. There, under the training of their founding father, J. Willard Marriott, Bill and Dick learned how to make French fries. It proved to be a good training ground for the brothers Marriott. Chairman J. Willard logs 200,000 miles a year keeping tabs on the hotels and restaurants. Brother Dick, who is vice chairman, hits the road too. In the past two decades, Marriott's sales and profits doubled five times. Last year return on equity hit a lofty 32.7%. Mom Alice remains a vice president. Devout Mormons. Eight children among them.
SIR Y. K. PAO, 70 **and family**	HONG KONG	▨	**$1.3**	**65% of World International Ltd., holding company with real estate, hotel, and department store operations; 100% of East Asia Navigation; interest in Standard Chartered Bank in London.** Went into shipping in 1954 because he wanted to be No. 1 and figured he couldn't compete with the big trading houses and banks. Sold most of his ships and tankers in 1980 and got into property development. Pao controls Dragon-air, the colony's only competitor for the state-owned airline. Four daughters; three sons-in-law in the business. The sharp break in the inflated Hong Kong stock exchange sent the value of Pao's holdings plummeting by $100 million.
ROBERT EDWARD TURNER III, 50	Atlanta GEORGIA	N	**$1.3**	**62% of voting stock of Turner Broadcasting System.** Turner expanded the billboard company he took over in 1963, using vacant billboards to advertise the radio stations he bought. Part of the 1977 winning America's Cup team, "Captain Outrageous" has launched "Superstation" WTBS, the Goodwill Games, Cable News Network, Turner Network Television, and more. A few years ago cable distributors and retailers had to bail him out with $562.5 million to cover debt payments, but the stock has quadrupled in the past year. Turner Broadcasting System owns the Atlanta Braves (baseball) and the Atlanta Hawks (basketball). Divorced twice, five children.
MADELEINE DASSAULT, 88 **SERGE DASSAULT,** 64 **CLAUDE DASSAULT**	Paris FRANCE	▨	**$1.2**	**50% of Avions Marcel Dassault-Breguet Aviation SA; real estate, construction, film studios, publishing, finance, forestry, and a Saint-Emilion vineyard.** The widow and sons of airplane designer Marcel Dassault inherited his share of the business. The state owns the other half. Company profits have steadily declined in recent years because of problems in selling its Rafale fighter, the French government's reduction in defense spending, and the end of the Iran-Iraq war.
MARK DIETHELM	Zurich SWITZERLAND	N	**$1.2**	**Diethelm & Co., with more than 20 manufacturing companies in Switzerland, Australia, Asia, and the U.S.; real estate.** Diethelm's grandfather Wilhelm founded a trading group in 1887 in Bangkok, then expanded throughout Asia and acquired manufacturing companies in Europe. An extremely private person, Mark has accumulated huge real estate holdings in Asia and the U.S. and on the Continent.
EDWARD L. GAYLORD, 70	Oklahoma City OKLAHOMA	▨	**$1.2**	**Controlling interest in Oklahoma Publishing, Opryland USA and the Nashville Network, oil and gas interests, 5.9% stake in Dow Jones & Co.** Since 1974, Gaylord has shrewdly transformed his father's newspaper company into a steadily expanding communications and entertainment empire. A right-wing power broker, he expresses his opinions from his office at the *Daily Oklahoman*, Oklahoma City. Owns a 10% stake in the Texas Rangers. Four children.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
WALTER HAEFNER, 79	Kuesnacht SWITZERLAND	N	**$1.2**	**100% of Careal Holding; includes 100% of Amag, Switzerland's largest car importer, and 20.5% of Computer Associates International.** The son of a missionary in Tibet, Haefner offered charcoal generators as an inexpensive substitute for petroleum when World War II created a fuel shortage. He later retrieved the obscure Amag from bankruptcy and began importing cars from the U.S., Britain, and West Germany. In the 1970s, Haefner built a profitable computer company in Switzerland. He sold that company for an interest in what became Uccel Corp. In a 1987 merger, Haefner's 58% of Uccel was converted into 20.5% of CAI, one of the biggest software companies in the world.
WILLIAM R. HEWLETT, 76	Portola Valley CALIFORNIA	▨	**$1.2**	**12% of Hewlett-Packard.** Hewlett, along with his partner Packard, returned last spring after 50 years to the garage where they started their company. The building was dedicated as a historic landmark: the "birthplace of Silicon Valley." The company's first product, an audio oscillator, was used by Walt Disney Studios to develop the sound system for the classic film *Fantasia*. Known for his people-oriented management style, Hewlett retired from the board in 1987. New management pledged to uphold his tradition. A philanthropist, Hewlett gave $2 million this year for a Silicon Valley computer chip museum.
MARTIN HILTI, 74	Schaan LIECHTENSTEIN	▨	**$1.2**	**87% of Hilti AG, manufacturer of industrial fasteners.** Sales were up 13% and profits 32% last year at the company Hilti started at the age of 27. Employees never forget who's boss: An official Martin Hilti portrait graces all production and marketing facilities. He is so involved in day-to-day operations that the company seems ill prepared for his semiretirement next year, when he plans to hand over the reins to his son Michael, 42.
CARL C. ICAHN, 53	Bedford NEW YORK	N	**$1.2**	**90% of TWA; 11.4% of USX; 100% of ACF Industries Inc., rail car producers.** A bout of hypochondria led him to drop out of medical school. Then his uncle Elliott helped him put up the money for a seat on the New York Stock Exchange, and Icahn & Co. was born. Launched raids against Marshall Field & Co., Tappan Co., Dan River, B.F. Goodrich, Phillips Petroleum, American Can, and Gulf & Western. Sold all his Texaco stock in June for $2.07 billion, in the largest NYSE stock transaction ever. Lives on 38-acre estate with Czechoslovakian-born wife Liba. Two children.
MICHAEL R. MILKEN, 43	Encino CALIFORNIA	N	**$1.2**	**Investments.** A capitalist of Faustian proportions, Milken awaits the verdict of a merely mortal society distrustful of his myopic genius for finance. The former Drexel Burnham Lambert junk bond maven has set aside $700 million in assets for federal monitoring, pending the outcome of the government's indictment against him for criminal racketeering and securities fraud. The trial is set for March 1990. Drexel paid him $1.15 billion between 1983 and 1987—$550 million in 1987 alone—and during those same years he donated $260 million to Milken family foundations. The banalities of his life—from his toupee to his tableware—have been scrutinized ad infinitum, offering few clues to his character. He lives simply with wife Lori and three children on an estate once occupied by Clark Gable and Carole Lombard.
ISAO NAKAUCHI, 66	Kobe JAPAN	▨	**$1.2**	**14.9% of the Daiei, Japan's largest supermarket/discount chain; real estate and art.** Chose to build more than drugstores (the original family business) and made Daiei into Japan's largest retailer. Last fall the brash Nakauchi bought the Hawks, a professional baseball team, from an ailing railroad company and built a stadium in Fukuoka.
PRINCE SULTAN BIN ABDUL-AZIZ AL SAUD, 63	Riyadh SAUDI ARABIA	▨	**$1.2**	**Saudi Arabia's oil riches.** Minister of Defense and brother of King Fahd, the Prince is highly accessible to ordinary Saudis, especially those who live in the desert and are most likely to join the armed forces. He's known for being very generous and giving money to members of his constituency who ask for his help.
PHILIP FREDERICK ANSCHUTZ, 49	Denver COLORADO	▨	**$1.1**	**100% of Anschutz Corp.: includes the Southern Pacific Railroad plus investments in oil exploration, mining, real estate, and stocks.** After ten years of trying, Anschutz finally succeeded in bringing his collection of Western art to Moscow, where 65 pieces went on exhibit recently. On hand for the opening: his favorite music group, the Nitty Gritty Dirt Band. Back at the ranch, he and Peter Coors of Coors Brewing Co. are trying to prevent National Farms from building a $50 million hog farm near their spreads in northeastern Colorado. National Farms is owned by the Basses.
OTTO BEISHEIM, 65	Baar SWITZERLAND	N	**$1.1**	**Metro Group, department store chain in 14 countries; controlling interest in Kaufhof AG; 60% of Pelikan Group office equipment; more.** The German department store baron acquired his fortune late in life. The son of a farm manager, he made a business trip to the U.S. while working for an electronics firm in the 1960s. He discovered the "cash and carry" system and became the first to introduce it to the Old World, where it was an instant hit. Beisheim has set up shop in tax-friendlier Switzerland. His anonymity allows him to visit his operations unrecognized, since few of his employees have ever met him.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
SEBASTIAO FERRAZ DE CAMARGO PENTEADO, 80	São Paulo BRAZIL	▨	**$1.1**	**92% of Construçoes e Comércio Camargo Corrêa SA, the largest construction company in Brazil; investments in banking, textiles, cement, ranching, and mining.** Camargo was born into a wealthy São Paulo farming family that fell on hard times. He and a partner formed Camargo Corrêa in 1938 to build roads in São Paulo; now the company is expanding that city's airport and subway. Although Camargo has three sons-in-law, he recently turned over the helm to nonfamily member Werner Schmidt Rehder. Camargo promises to remain involved in the company: "Life is like a bicycle. Whoever stops pedaling will fall over."
WILLIAM GATES III, 34	Seattle WASHINGTON	▨	**$1.1**	**38% of Microsoft computer systems.** At 13, he taught himself computer programming. At 19, he dropped out of Harvard to start Microsoft with a partner. Made a mint in 1986 when he took the company public. The stock got hit last spring when delays in shipping two new programs cut into quarterly profits. Gates is still the youngest individual billionaire, though Lee Bass, of the Bass brothers (which see), is 33. Gates is single.
TARO IKETANI, 72 **and family**	Tokyo JAPAN	▨	**$1.1**	**34% of Tokyo Steel Manufacturing, the largest operator of electric furnaces in the world.** With the domestic economy booming, the Japanese steel industry has been strong. The rise in market value of the company Iketani started in 1934 propelled him to billionaire ranks in 1988. Son Masanari now runs Tokyo Steel.
KLAUS J. JACOBS, 53	Kuesnacht SWITZERLAND	N	**$1.1**	**100% of Jacobs Suchard, world's third-largest coffee, chocolate, and confection producer.** In 1982 he made a name for himself as a raider when his West German coffee roaster Jacobs AG acquired Swiss chocolate maker Interfood. Since then group sales have increased 150%, profits have tripled, and European market share has sweetened from about 20% to 80%. The candy man has gobbled up U.S.-based E.J. Brach, Italy's Du Lac, Belgium's Côte d'Or, the Greek Palvides, and German Van Houten, at a tab of $1 billion. Bought out his brother and two sisters in May. Jacobs is now marketing chocolate to Asians. He is also planning a new chain of bistros, which he hopes to sprinkle around the globe. Owns more than 100 horses in his hometown of Bremen, West Germany; member of the Swiss national dressage team.
AHMED JUFFALI, 60	Riyadh SAUDI ARABIA	▨	**$1.1**	**E.A. Juffali & Brothers, the largest private business in the Arabian Peninsula, a trading company with contracting and industrial subsidiaries; operates Saudi franchises for Daimler Benz, Michelin, Siemens, IBM, and others.** Raised by an older brother, Juffali built his company with determination and a talent for selecting good subordinates. In the 1940s he earned a concession from a British electronics company to supply electricity to the town of Taif—at the time he had only 125 subscribers and maximum daytime consumption was 70 kilowatts.
KIRK KERKORIAN, 72	Las Vegas NEVADA	N	**$1.1**	**Proceeds from sale of MGM/UA Communications Co.; real estate.** Kerkorian, the son of a Turkish Armenian immigrant, flew military aircraft from Europe after World War II and made his first fortune trading used airplanes. In 1986 the former amateur boxer sold his stake in MGM/UA to Ted Turner. He bought United Artists back from Turner, then sold most of it again this year, retaining the MGM name, the Beverly Hills headquarters building, and some television properties. He also owns MGM Grand Air and the Desert Inn Hotel in Las Vegas.
SALEM AHMED BIN MAHFOUZ, 82	Mecca SAUDI ARABIA	▨	**$1.1**	**52% of National Commercial Bank in Jiddah, the largest in Saudi Arabia; 30% of BCCI Holdings of Luxembourg; 10% of First American Bankshares.** For 35 years Salem worked as a houseboy for the wealthy Kaaki family; then he started a money-changing business with partner Abdul Aziz Kaaki. He founded first Saudi-owned bank in 1954. Son Khaled, chief executive of NCB, is a major foreign investor and is believed to have made transactions for King Fahd.
ROBERT W. MILLER, 56	HONG KONG	N	**$1.1**	**40% of Duty Free Shoppers Group Ltd., world's largest duty-free retailer; reportedly investments in bank, steel mill, casino, and real estate.** The 1955 graduate of Cornell University's School of Hotel Administration teamed up with classmate Charles Feeney (also a billionaire) to sell foreign cars and duty-free liquor to U.S. servicemen and tourists in Europe in the late 1950s. In 1960 they created the secretive Duty Free Shoppers in Hong Kong. DFS caters to Japanese tourists, who account for 60% of sales, offering designer-label products, Japanese-speaking salesclerks, and extended warranties.
MARC RICH, 54	Zug SWITZERLAND	N	**$1.1**	**Marc Rich & Co. Trading, commodities; control of merchant bank Ron Investment in Spain; real estate in Madrid.** Rich made most of his fortune in metals trading, but he's best known as a tax fugitive who left the U.S. for the protective environment of Switzerland. Rich has been building up his Spanish holdings and is now negotiating with the Spanish trade union UGT to manage its pension funds.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
ABDUL-AZIZ AL SULAIMAN, 50	Jiddah SAUDI ARABIA		**$1.1**	**Jiddah's Bank Al Jazira; 50% of DIC Holding of Delaware, whose interests include an aerospace manufacturer in New Jersey; Saudi real estate; Nissan's Saudi distributorship; Meridien Hotels in Houston and Boston; Caribbean cement plants; ships.** His father, the first Saudi Finance Minister, received numerous gifts from King Abul Aziz al Saud, the founder of modern Saudi Arabia. Among them was a lucrative cement franchise and large areas of real estate, the foundation for the Sulaiman fortune.
KARL ALBRECHT, 69 **THEO ALBRECHT,** 67	Essen WEST GERMANY		**$1.0**	**ALDI discount stores, 1,853 in Germany, Belgium, Spain, Austria, and Denmark; Benner Tea Co. in Iowa; interest in Albertson Co., a supermarket and drugstore chain in Boise, Idaho.** The boys grew up over their parents' grimy grocery store. Expanded their no-frills outlets to include fruits, vegetables, meats, and merchandise such as Mickey Mouse dinnerware and inexpensive microwaves, opening downtown branches.
HENRI ANDRE, 51 **and family**	Prilly SWITZERLAND	N	**$1.0**	**Andre & Cie, with worldwide businesses including food processing, commodity trading, coffee, aviation, shipping, cattle ranches, hardware.** Grandson of company founder George Andre, who opened a small shop in 1877 in Nyon, France, and sold flour, dried vegetables, and Italian pasta. Henri Sr. expanded into international grain trading after World War I and shipping after World War II. The secretive Andre family is known to control Kansas-based Garnac, one of the largest grain traders in the world. The main financial backers of a Calvinist sect that seeks to restore simplicity to modern life, the Andres are modest and frugal.
EDWARD BRONFMAN, 62 **PETER BRONFMAN,** 59	Toronto ONTARIO		**$1.0**	**70% of Edper Enterprises: investments in energy, financial services, and consumer products companies.** While in their 20s, the Toronto Bronfmans, cousins of Edgar and Charles, were forced to sell out of the Seagram business at below-market prices to save their father's position with the company. But they recovered, building a powerful assortment of holdings. In July they took Edper Enterprises public.
JOHN M. CARRAS, 73	London ENGLAND	N	**$1.0**	**Cash; J.M. Carras group, an international shipping company.** A native of the Greek island of Chios, Carras inherited his father's shipping business, moving most of his operations to New York and then to London. Homes in London, Athens, and Lausanne. Leads a simple life; sometimes seen at the local Safeway doing the grocery shopping. His cousin, J. C. Carras, was a prominent shipping magnate until he decided to switch to the tourist industry in the 1960s. J.C. eventually went bankrupt and died in Greece this year.
NEJAT FERIT ECZACIBASI, 76	Istanbul TURKEY	N	**$1.0**	**Eczacibasi Group, pharmaceuticals, building materials, paper.** The son of a well-to-do Turkish pharmacist, Eczacibasi enjoyed private tutors at home, then went abroad to study chemistry at the universities of Heidelberg, Chicago, and Berlin. In the 1950s, Eczacibasi built Turkey's first modern pharmaceuticals factory and soon started manufacturing the drugs of companies such as Upjohn and Bristol-Myers. A snappy dresser, he favors silk handkerchiefs that match his ties, English fabrics, and Turkish tailors.
PRINCE FRANZ JOSEPH II, 83	Vaduz LIECHTENSTEIN		**$1.0**	**98% of Liechtenstein Bank, the country's largest; real estate; agricultural operations in Austria and the U.S.; wineries; art collection.** Since the death of Japanese Emperor Hirohito, the sovereign of Liechtenstein is the world's oldest reigning monarch and one of the richest. His highly profitable bank recently opened subsidiaries in London, Frankfurt, New York, and the Cayman Islands. Only the art holdings of Queen Elizabeth and Baron Thyssen are more valuable than the Prince's collection of Flemish, Italian, and German masters; antique furniture, tapestries, and coins; and ancient weaponry.
LEONIDAS GOULANDRIS **VASILIOS GOULANDRIS**	London ENGLAND	N	**$1.0**	**International shipping; cash; art.** The Goulandris brothers come from a Greek shipping family that got its start two generations ago on the island of Andros. Leonidas and Vasilios's father, Nicholas John, built a successful business while some other branches of the family went broke. The Goulandris group operates out of London.
MARGARET HUNT HILL, 73 **HAROLDSON "HASSIE" HUNT III,** 72	Dallas TEXAS		**$1.0**	**Large interests in Hunt Petroleum Corp., real estate, investments.** Margaret, Texas oilman H. L. Hunt's first-born, long ago distanced her finances from those of her brothers Herbert, Bunker, and Lamar, who have squandered a fortune that reached $8 billion at its peak and is down to around $300 million today. Margaret controls her brother Hassie's money as well; he had a nervous breakdown many years ago. Their sister, Caroline Rose Hunt, whose hotel fortune is distinct from Margaret's and Hassie's, is worth more than $960 million on her own. Fellow billionaire Ray Hunt (which see) is their half-brother.
KHALED BIN IBRAHIM **ABDUL-AZIZ BIN IBRAHIM**	Riyadh SAUDI ARABIA		**$1.0**	**Real estate and investments.** Sons of the former governor of the tiny Saudi province of Al Baha, they have the privilege of being the brothers of King Fahd's favorite wife. Made a bundle by representing foreign aviation suppliers such as Boeing, which sold ten 747s to the Saudi national airline in 1984. Khaled is now developing motels and gas stations.

N NEWCOMERS ▨ AMERICANS ▨ EUROPEANS ▨ ASIANS ▨ OTHERS

The Billionaires

NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
VEHBI KOC, 88	Istanbul TURKEY	▩	**$1.0**	**Koc Holding: 105 companies, including automotive, household appliances, food, banking, insurance, construction, and tourism.** This descendant of a 12th-century Muslim philosopher was born a pauper in undeveloped turn-of-the-century Turkey. He started a building materials company in 1926, teamed up with General Electric in 1946, and brought cars to Turkey via a 1956 partnership with Ford. Koç dons his pajamas every afternoon for his half-hour nap. No lover of the arts, he once left a production of *The Cherry Orchard* because it interfered with his bedtime. Never employs the rich: Since they don't need the money, he says, they don't work hard enough. Widower. All four children work for the company.
WILLIAM INGRAHAM KOCH, 49 **FREDERICK ROBINSON KOCH**, 55	Palm Beach CALIFORNIA New York NEW YORK	N	**$1.0**	**100% of Oxbow Corp.; cash; art.** The brothers were paid off in 1983 by siblings Charles and David (which see) in a bitter battle for control of Koch Industries. Their take: about $1 billion. Bill started Oxbow, an energy trading corporation, with his winnings. Married; one child. Fred, the eldest and poorest, fell out of the founding father's graces and was subsequently dropped from the will. His cut went into his art collection. A very private person, he's single.
LEE SENG WEE, 59 **and family**	SINGAPORE	░	**$1.0**	**25% of Oversea-Chinese Banking Corp.; rubber, pineapple, and palm oil plantations in Malaysia; real estate, publishing, and insurance in Singapore.** Lee studied business in Canada, inherited and expanded his father's operations. Even the local press knows very little about him. Through a spokesperson, he responds to requests for interviews with "You are wasting your time."
SALVATORE LIGRESTI, 57	Milan ITALY	▨	**$1.0**	**100% of Premafin, a holding company for 74% of Grassetto, construction; 32% of insurance giant SAI; 50.1% of Autostrada Torino-Milano; 28.9% of Pozzi Ginori (bathroom fixtures); real estate; and more.** A Sicilian-born engineer who makes everything from *autostrade* (Italy's superhighways) to the cable cars that soar over the Piccolo San Bernardo pass in the Alps to toilets for Milan apartment buildings. Nicknamed "Mr. Five Percent" because of his 5% ownership of many of Italy's big companies. A favorite punching bag of the Italian press, he has provided fresh copy with three convictions for illegal construction projects, including converting a hotel into office space. Appeals in the cases are pending.
LARS-ERIK LUNDBERG, 69 **FREDERIK LUNDBERG**, 38	Norrkoeping SWEDEN Zurich SWITZERLAND	N	**$1.0**	**61.7% of Lundberg Group, a Swedish construction, real estate, industrial, and banking conglomerate.** Lars-Erik started out in 1944 building residential buildings in his hometown of Norrkoeping, near the Baltic Sea in southeastern Sweden. He was uneducated but streetwise, and expanded to neighboring towns during a housing shortage in the 1960s. His son Frederik, who has an engineering degree and an MBA from the Stockholm School of Economics, suggested they move into financing industrial projects. In 1980, at the age of 29, Frederik became CEO of the Lundberg Group. To avoid Sweden's high taxes, Frederik recently moved to Zurich.
RUDOLF AUGUST OETKER, 73 **and family**	Bielefeld WEST GERMANY	▨	**$1.0**	**Oetker Group, West Germany's largest food company, and some 70 enterprises, including beverages, banks, luxury hotels, insurance, and brewing.** Family business started with baking powder. His grandfather's book *Backen macht Freude*, or *The Joy of Baking*, sold 27 million copies in Germany, more than the Bible. Rudolf rebuilt and diversified the business after the war. He divested the unprofitable shipping business this year. Collects old masters; has a gallery in London. Oetker abhors publicity, especially since his son Richard was tortured and permanently maimed during a 1976 kidnapping. Five sons, three daughters.
SAKIP SABANCI, 56	Istanbul TURKEY	▩	**$1.0**	**Sabanci Holding, a textile and rubber manufacturer.** Inherited the businesses built by his father, who was born a peasant and died one of the wealthiest men in Turkey. Superstitious Sakip carries an evil eye and an amulet in his pocket. His dream is to found a great university in Turkey. Has impressive collections of Turkish paintings and prayer beads, and calligraphy from the Ottoman period. Tight with his money, he once tried to bargain in Harrods. Married to his cousin. Three children.
MAX SCHACHENMANN, 74	Oftringen SWITZERLAND	N	**$1.0**	**100% of Pluss-Staufer, world's largest producers of calcium carbonate; Swiss representative of Germany's Hoechst Pharmaceutical.** His grandparents, Gottfried Pluss and Emma Staufer, bought a calcium quarry near the French village of Omey and sold "the finest putty available." When Max took over after World War II, calcium carbonate was becoming popular as a filler and a whitening agent in paints and plastics. Pluss-Staufer now controls 60% of the European market and 25% of the North American market for calcium carbonate, marble, and chalk. Max speaks fluent German, French, English, Italian, Spanish, and Portuguese. Winters in Arizona. Three-time Swiss hang-gliding champion. Two sons, one daughter.

N NEWCOMERS ■ AMERICANS ▨ EUROPEANS ░ ASIANS ▩ OTHERS

The Billionaires

NAME Age		**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
WILLIAM BERNARD ZIFF JR., 59	Pawling NEW YORK N	**$1.0**	**100% of Ziff Communications; cash, real estate.** Heir to his father's share of Ziff-Davis, a New York publishing house, William Jr. joined the company in 1953 at William Sr.'s death. Ziff bought out partner Bernard Davis and added to his fortune through two decades of acquisitions. At its peak in the late Seventies, Ziff-Davis owned 24 profitable magazines and six television stations. Prostate cancer in the early 1980s prompted Ziff to liquidate. The take: $80 million for his television stations and $712 million for his magazines. Recovered, he resumed the chairmanship in 1988 of Ziff Communications, a small computer-related publishing company (estimated 1988 revenues: $218 million).

INDEX TO THE BILLIONAIRES

Agnelli, Giovanni **104**
Albrecht, Karl **128**
Albrecht, Theo **128**
Andre, Henri **128**
Annenberg, Walter H. **112**
Anschutz, Philip Frederick **124**
Anthony, Barbara Cox **76**
Arison, Ted **92**
Bass, Edward Perry **74**
Bass, Lee Marshall **74**
Bass, Perry **74**
Bass, Robert Muse **74**
Bass, Sir Richardson **74**
Beatrix, Queen **76**
Beisheim, Otto **124**
Benetton, Carlo **116**
Benetton, Gilberto **116**
Benetton, Giuliana **116**
Benetton, Luciano **116**
Berlusconi, Silvio **84**
Bertarelli, Fabio **108**
Bettencourt, Liliane **108**
Bolkiah, Sultan Hassanal **73**
Bren, Donald **96**
Brenninkmeijer, Godfried **76**
Bronfman, Charles R. **84**
Bronfman, Edgar M., Sr. **84**
Bronfman, Edward **128**
Bronfman, Peter **128**
Buffett, Warren Edward **76**
Busch, August A., Jr. **108**
Camargo, Sebastião **126**
Carras, John M. **128**
Chambers, Anne Cox **76**
Chang, Y.F. **88**
Cooke, Jack Kent **104**
Dassault, Claude **120**
Dassault, Madeleine **120**
Dassault, Serge **120**
Davis, Marvin **104**
DeBartolo, Edward J., Jr. **116**
DeBartolo, Edward J., Sr. **116**
DeBartolo, Marie Denise **116**
De Moraes, Antônio Ermírio **112**
De Moraes, Ermirio Pereira **112**
De Moraes, José Ermírio, Jr. **112**
De Moraes, Maria Helena **112**
Diethelm, Mark **120**
Dorrance, Bennett **92**
Dorrance, John T., III **92**
Dreesmann, Anton **92**
Eczacibasi, Nejat Ferit **128**
Elizabeth II, Queen **73**
Feeney, Charles F. **104**
Fentener van Vlissingen, F.H. **80**
Finck, August von **88**
Flick, Friedrich Karl **88**
Ford, Josephine **116**
Ford, William Clay **116**
Franz Joseph II, Prince **128**
Furukawa, Tamesaburo **100**
Gallo, Ernest **104**
Gallo, Julio **104**
Gardini, Raul **112**
Gates, William, III **126**
Gaylord, Edward L. **120**
Getty, Gordon Peter **120**
Goldsmith, Sir James **116**
Goulandris, Leonidas **128**
Goulandris, Vasilios **128**
Grosvenor, Gerald **74**
Haefner, Walter **124**
Hassan II, King **120**
Haub, Erivan Karl **84**
Hearst, Randolph A. **100**
Hearst, William R., Jr. **100**
Heineken, Alfred Henry **120**
Helmsley, Harry B. **108**
Henkel, Konrad **84**
Hewlett, William R. **124**
Hill, Margaret Hunt **128**
Hillman, Henry Lea **80**
Hilti, Martin **124**
Hsu, Y.Z. **76**
Huang, Shi H. **108**
Hunt, Haroldson, III **128**
Hunt, Ray **116**
Ibrahim, Abdul-Aziz Bin **128**
Ibrahim, Khaled Bin **128**
Icahn, Carl C. **124**
Iketani, Taro **126**
Irving, Arthur Leigh **74**
Irving, James Kenneth **74**
Irving, John E. **74**
Irving, Kenneth Colin **74**
Ishibashi, Kanichiro **108**
Ito, Masatoshi **116**
Jacobs, Klaus J. **126**
Juffali, Ahmed **126**
Kadoorie, Horace **116**
Kadoorie, Lawrence, Lord **116**
Kadoorie, Michael **116**
Kamprad, Ingvar **92**
Kawamoto, Genshiro **116**
Kerkorian, Kirk **126**
Kipp, Karl Heinz **92**
Kluge, John Werner **74**
Koç, Vehbi **130**
Koch, Charles **76**
Koch, David **76**
Koch, Frederick Robinson **130**
Koch, William Ingraham **130**
Lauder, Estée **92**
Lee, Seng Wee **130**
LeFrak, Samuel Jayson **100**
Lemos, Costas Michael **80**
Li, Ka-Shing **88**
Liem, Sioe Liong **96**
Ligresti, Salvatore **130**
Livanos, George Stavros **112**
Lundberg, Frederik **130**
Lundberg, Lars-Erik **130**
MacMillan, Cargill, Jr **84**
MacMillan, Whitney **84**
Mahfouz, Salem Ahmed Bin **126**
Al Maktoum, Sheikh **96**
Malone, Mary Alice Dorrance **92**
Marriott, Alice Sheets **120**
Marriott, John Willard, Jr. **120**
Marriott, Richard Edwin **120**
Mars, Forrest E., Jr. **73**
Mars, Forrest E., Sr. **73**
Mars, John F. **73**
Maus, Bertrand **100**
Maus, Jacques **100**
Maxwell, Robert **104**
McCaw, Bruce R. **96**
McCaw, Craig O. **96**
McCaw, John E., Jr. **96**
McCaw, Keith W. **96**
Milken, Michael R. **124**
Miller, Robert W. **126**
Milliken, Gerrish **96**
Milliken, Roger **96**
Mohn, Reinhard **104**
Moores, Sir John **84**
Murdoch, Keith Rupert **100**
Murdock, David H. **112**
Nakajima, Kenkichi **80**
Nakauchi, Isao **124**
Al Nahayan, Sheikh **112**
Newhouse, Donald E. **73**
Newhouse, Samuel I., Jr. **73**
Nordmann, Gerard **100**
Nordmann, Philippe **100**
Oetker, Rudolf August **130**
Olayan, Suliman Saleh **100**
Packard, David **96**
Packer, Kerry **116**
Pao, Sir Y.K. **120**
Perelman, Ronald Owen **80**
Perot, H. Ross **84**
Pritzker, Jay **74**
Pritzker, Robert **74**
Quandt, Johanna **76**
Al Rajhi, Suliman Abdul-Aziz **96**
Rausing, Gad **80**
Rausing, Hans **80**
Redstone, Sumner M. **84**
Reichmann, Albert **73**
Reichmann, Paul **73**
Reichmann, Ralph **73**
Reynolds, Donald W. **108**
Rich, Marc **126**
Rockefeller, David **108**
Rockefeller, Laurance S. **108**
Al Sabah, Sheikh Jaber Ahmed **76**
Sabanci, Sakip **130**
Sacher, Paul **112**
Sacher-Stehlin, Maja **112**
Safra, Edmond **96**
Sainsbury, Alan, Lord **80**
Sainsbury, David **80**
Sainsbury, Sir John **80**
Sainsbury, Sir Robert **80**
Sasaki, Kichinosuke **88**
Al Saud, King Fahd **73**
Al Saud, Prince Sultan
Bin Abdul-Aziz **124**
Schachenmann, Max **130**
Schickedanz, Grete **92**
Schmidheiny, Alexander **88**
Schmidheiny, Stephan **88**
Schmidheiny, Thomas **88**
Shino, Rinji **92**
Simmons, Harold C. **100**
Simplot, John Richard **96**
Stern, Leonard Norman **112**
Al Sulaiman, Abdul-Aziz **128**
Taubman, A. Alfred **80**
Thomson, Kenneth Roy **74**
Thurn und Taxis, Prince J von **88**
Thyssen-Bornemisza, Baron H.H. **112**
Tisch, Laurence Alan **88**
Tisch, Preston Robert **88**
Trump, Donald J. **104**
Tsai, Wan-Lin **73**
Tsutsumi, Yoshiaki **80**
Turner, Robert Edward, III **120**
Uehara, Shoji **108**
Vestey, Edmund **88**
Vestey, Samuel, Lord **88**
Vogel, Jacqueline Mars **73**
Walton, Sam Moore **73**
Wang, Y.C. **76**
Wang, Y.T. **76**
Weston, Garfield **84**
Weston, W. Galen **84**
Wexner, Leslie H. **100**
Ziff, William Bernard, Jr. **133**

IMPROVING EXECUTIVE HEALTH • CLEANER CARS • ARE ESOPS WORTH IT?

C8900-1

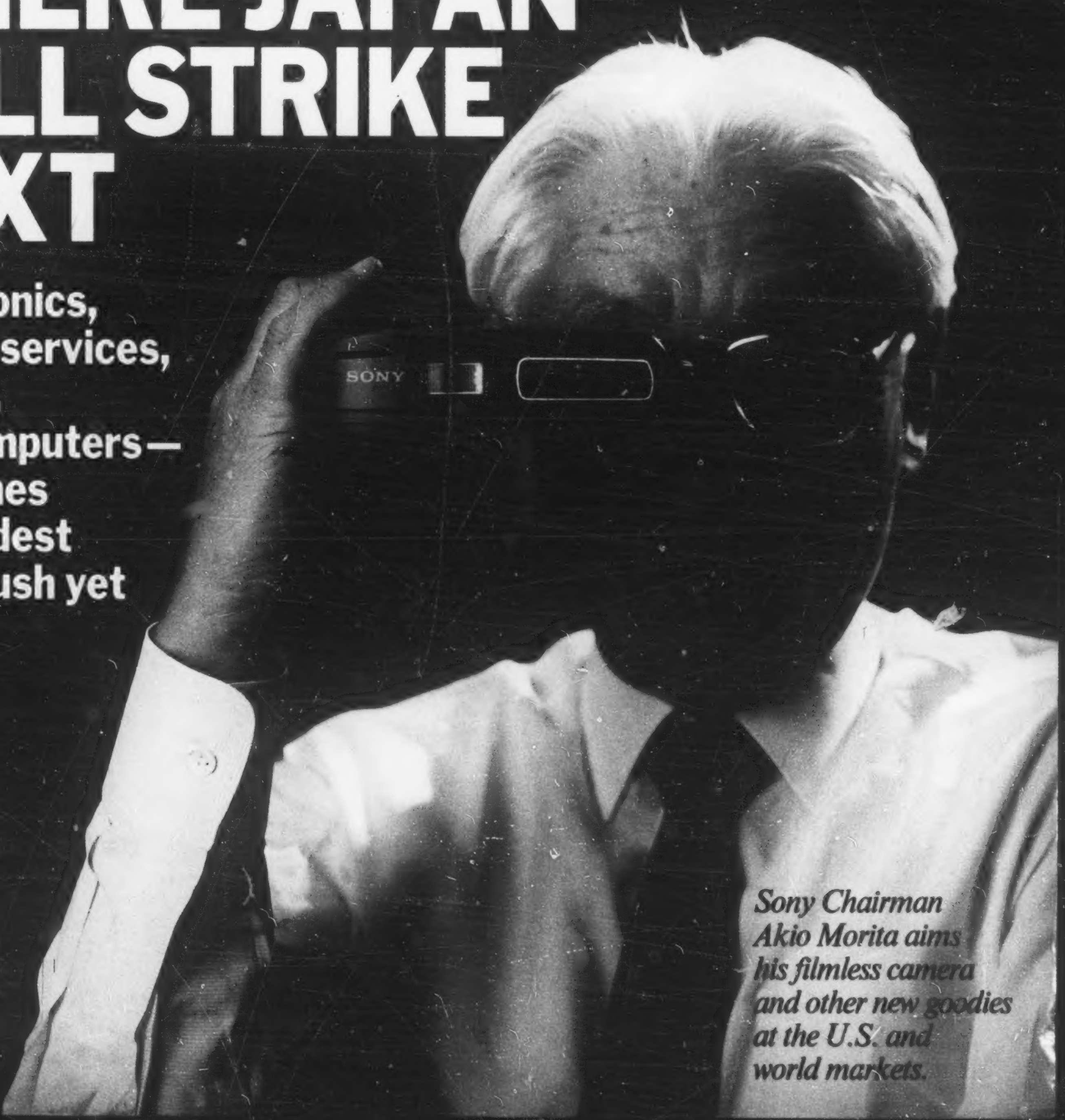
SEPTEMBER 25, 1989

$3.50

FORTUNE

WHERE JAPAN WILL STRIKE NEXT

In electronics, financial services, retailing, supercomputers—here comes the broadest export push yet

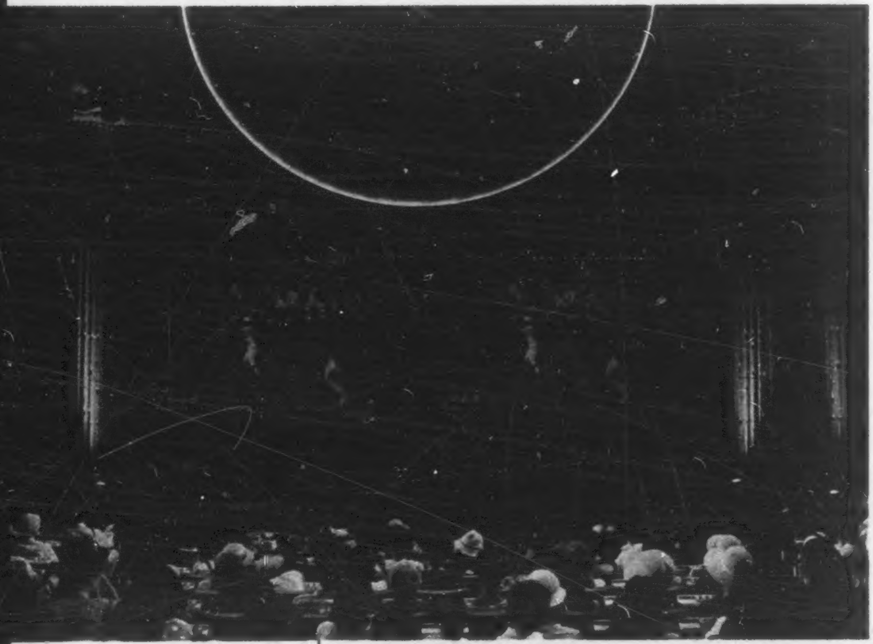


Sony Chairman Akio Morita aims his filmless camera and other new goodies at the U.S. and world markets.

*105G*********5-DIGIT 20814
*S99ES520S91*5 Y520814 JUN91
SR1 CNGRSSN INFO SVC MDOOMA**
4520 EAST-WEST HWY *D19153
PL00215
BETHESDA MD 20814-3319

SEPTEMBER 25, 1989

FORTUNE



ABOVE: A demonstration of Hitachi's high-definition TV screens, photographed in Yokohama by Robert Wallis—Sipa

They are confident—even arrogant—about their ability to innovate in technology. PAGE 42

COMPETITION/Cover Story

WHERE JAPAN WILL STRIKE NEXT 42

Loaded with cash and eager to head off fire-breathing challenges from Korea and other growing Asian dragons, the folks who brought you the Walkman, the VCR, and the Honda are readying a sunburst of new products and services. Among them: tape recorders the size of a matchbox and flat TV screens that you can hang on walls. The Japanese will go after new business where they have only beachheads or no presence at all—even hamburgers in Honolulu. Rivals beware. *by Gene Bylinsky*

A JAPANESE VIEW: WHY AMERICA HAS FALLEN BEHIND 52

Sony's Akio Morita asserts that the U.S. has forgotten how to innovate and has effectively opted out of manufacturing.

COVER: Sony's Akio Morita holding a Mavica MVC-C1 electronic still camera, photographed by Caroline Parsons

EXECUTIVE LIFE

NEW TRUTHS ABOUT STAYING HEALTHY 57

In a field where myths and misinformation about food, exercise, and stress abound in lethal doses, scientists are uncovering solid insights on how to live well longer. Avoiding the most common killers is largely up to you. *by Brian O'Reilly*

AUTOS

THE METHANOL CAR IN YOUR FUTURE 71

With President Bush urging them on, the automakers are hard at work on a vehicle that will run cleaner—and accelerate faster—than one fueled with gasoline. *by Andrew Kupfer*

DYNASTIES

THE BROWNS OF LOUISVILLE: KEEPING IT ALL IN THE FAMILY 86

For 119 years, they have run distiller Brown-Forman. Their secret? Meritocratic nepotism, dogged consistency, and premium brands like Jack Daniel's. *by Brett Duval Fromson*

CORPORATE PERFORMANCE

COMPANIES TO WATCH 96

Hartford Steam Boiler, Oneida, Synoptics Communications, and Marietta.

TECHNOLOGY

HOW TO BREAK THE SOFTWARE LOGJAM 100

Programming takes longer—and costs more—than most computer users expect. Don't count on a high-tech fix. Smarter management can unclog the bottlenecks. *by Brenton R. Schlender*

VOL. 120, NO. 7

"We can probably get through 1990 without any disasters."

PAGE 17

"America no longer makes things, it only takes pleasure in making profits from moving money around."

PAGE 52

"He turns and rips your head off before you know what hit you."

PAGE 86

"They rank the Harley look right up there with motherhood and God."

PAGE 155

"I'll sue if I consider it to be unfair."

PAGE 225

"Transforming a corporate culture is a far more complex dynamic than can be controlled by single individuals."

PAGE 233

MANAGING

TURNING AROUND THE LORD'S BUSINESS 116

Mainline churches are losing members, but smart pastors know how to call home the wandering lambs. Words familiar in boardrooms—market research, customer satisfaction—resound in pastoral offices. A look at success in the religious world reveals a great deal about managing in the secular. *by Thomas A. Stewart*

LITIGATION

THE CASE AGAINST EXPERT WITNESSES 133

Want to win a lawsuit? Just call an all-purpose expert. For a fee, you can find one to "prove" almost anything. Swearing that a product was misdesigned, self-styled accidentologists often make a big hit with juries. But judges are starting to rebel. *by Walter Olson*

MONEY & MARKETS

THE FOOLISH RUSH TO ESOPS 141

Turning the workers into owners has long seemed like a terrific idea, and companies threatened by takeover have lately seized on ESOPs as a raider repellent. But the outside shareholders, the company, and the employees themselves can suffer in the long term. *by Sylvia Nasar*

BOOK EXCERPT

HOW HARLEY BEAT BACK THE JAPANESE 155

Quality was awful, manufacturing a mess, and the Japanese were gobbling market share. The managers who bought the company pulled off one of America's most celebrated turnarounds.

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 8

The future of space exploration funding, how Disney will reap megaprofits from the Muppets, the zoom in corporate jet sales, and more.

FORTUNE FORECAST/CEO POLL 17

The seven-year boom has at least another year before it busts, say top executives. *by Faye Rice*

PERSONAL INVESTING 25

A primer on new wrinkles in an old standby: life insurance. *by Terence P. Paré*

Also: J.C. Penney's new shine, storm shelter stocks, and Portfolio Talk with Russell Thompson of United Income Fund.

FORTUNE PEOPLE 225

Leonard Stern vs. Donald Trump, a nonfamily boss for Wang Labs, and more. *by Mark Alpert*

ON THE RISE 226

LETTERS TO FORTUNE 229

Bouquets and brickbats for the second wives of CEOs, Jaguar vs. Lexus, and more.

BOOKS AND IDEAS 233

A top auto analyst chronicles General Motors' efforts to turn itself around. *by Alex Taylor III*

OTHER VOICES 245

It's time for judges to admit how often they make social policy, says a law school professor.

KEEPING UP *by Daniel Seligman* 251

EDITOR-IN-CHIEF Jason McManus
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin
TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS
Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, John J. Curran, Marta F. Dorion, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Colin Leinster, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Bill Saporito, Stratford P. Sherman, Lee Smith (Washington)
SENIOR EDITOR John F. Lawrence
ASSOCIATE EDITORS Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Alan Farnham, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, CA), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Robert E. Norton (Washington), Peter Nulty, Brian O'Reilly, Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Lenore Schiff, Brenton R. Schlender (San Francisco), Patricia Sellers, Andrew Evan Serwer, Thomas A. Stewart, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITORS Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Susan E. Kuhn, Julia Lieblich, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo), Richard S. Teitelbaum
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Charles J. Attardi, Leslie Brenner, Jonathan Brown, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Simone M. Kilian, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, David V. Rile, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CONSUMER MARKETING DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

Executive editor Armstrong: grace, style, and wisdom

JOHN S. ABBOTT

SOME PEOPLE are consummate journalists. One such rare talent is Richard Armstrong, who as our executive editor since 1977 has been a chief architect of FORTUNE. I say has been, unfortunately, because he is retiring after 20 years of lending his grace, style, and wisdom to our magazine.

For most of his time here, Dick has been an editor. His genius at this has never been questioned, only how he does it. The editor's job is not easily visible to the reader. The stories you read are expressions of our writers, but the big-picture polish or the tiny phrase that clarifies a thought are often provided by our editors. As Dick himself once put it, "I sit in for the reader, and I assume he or she is as bright as I am. If I can't follow a line of reasoning, I question it."

Few of us have his gift for "cellophane editing," his ability to repair a busted passage so subtly as to mimic the transparency of Scotch tape. His habit of preserving the voice of the author has made him the favorite editor of an entire generation of FORTUNE writers, many now editors themselves. My predecessor, Bill Rukeyser, explains, "He mastered the hardest thing for an editor to master—to edit just enough."

A Mississippian, Dick came to us by way of the University of Missouri School of Journalism, the Gadsden *Times* in Alabama, the U.S. Army (first lieutenant, artillery, Korean war), Columbia University (M.A., English lit), *Time*, and the *Saturday Evening Post*. After a short tour as a FORTUNE writer—he wrote precisely two stories—he was promoted to become an editor.

Fellow executive editor Allan Demaree calls him "the best pencil editor ever," which paints a literal picture of Dick at work. His office is always neat, the desk immaculate, excess paper disposed of. Manuscripts are neatly squared next to sharpened No. 2 pencils. Dick can be seen sitting before a manuscript, hands folded, deep in concentration. When he returns to the article at hand, he adds a few deft strokes, and it is done. Writers were grateful that he took time just to think. Says one: "He has always been inspiring to me. He never seemed harried, but he was always intellectually engaged."

So what is next for a journalist whose pen has recorded some four decades of change? A trip with his wife, Nancy, a former *Time* picture researcher, to visit their daughter Lucy, a novelist in Oxford, England. More time to go to the opera and listen to the classical music he loves. And reading, even more than the prodigious amounts he does now (he has finished *War and Peace* three times). "Reading is the best training for writers that there is," he says. Happily, he will return as a contributing writer, following a grand tradition of many of FORTUNE's editors past. The pleasure of such company will be yours as well as ours.

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President; Joseph A. Ripp, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, Fla. 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-621-8000. © 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company. **For subscription queries, call Customer Service at 1-800-621-8000.**

REACH FOR THE STARS

■ As *Voyager II* ended its stunningly successful 12-year grand tour of the outer planets with its flyby of Neptune and its moon Triton (shown above), funding for America's civilian space program seems headed, like the probe, into a void. Measured in constant dollars, NASA's budget appropriation, $10.9 billion in 1989, is less than half what it was in 1966. In July, President Bush called for a renewed national commitment to civilian space exploration. But the Administration's 1990 budget asks that Congress lift NASA spending a modest $2 billion, about $1 billion more than the House Appropriations Committee is ready to authorize.

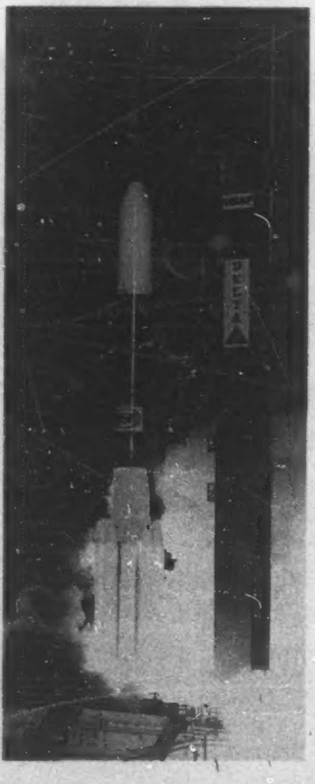
The U.S. can, and should, spend more on space. A reasonable goal would be to boost NASA funding to $15 billion next year. Few, if any, other federal programs yield such astronomical dividends. In a recent study, the Midwest Research Institute, a nonprofit think tank based in Kansas City, Missouri, calculated that each R&D dollar spent by NASA generates $9 in private spending.

NASA'S TOP CONTRACTORS

COMPANIES & PROJECTS	1988 in millions
Rockwell International Shuttle main engines	$1,714
Lockheed Test site support and engineering	$811
Morton Thiokol Shuttle solid rocket boosters	$423
Martin Marietta Shuttle external fuel tanks	$341
Boeing Space station life support	$302
McDonnell Douglas Space station propulsion	$299
General Electric Communications satellites	$219

Those dollars would likely go further were NASA to tip its spending more toward cost-effective unmanned space probes instead of continuing to pour disproportionately large sums into manned space shuttle missions. NASA officials and the major contractors that profit from its $24 billion shuttle program defend manned space flight on the ground that it galvanizes public support for space exploration. But *Voyager* did more to advance human knowledge about the heavens and to fire public excitement—all for a comparatively trifling $865 million. Similar giant leaps for science and popular enthusiasm are likely to result from successful launchings next year of the Hubble space telescope, which will search for the edge of the universe, and the upcoming Galileo mission to Jupiter.

Soaring aloft on private wings



PHIL HUBER—BLACK STAR

Smart spending on many more unmanned space probes will also advance the private commercialization of space. In August **McDonnell Douglas** successfully sent up a communications satellite, America's first commercial launch (shown at left) of an orbiting payload. The company has launch orders worth $400 million booked through 1991. **General Dynamics** and **Martin Marietta** are also vying with state-funded European, Japanese, Soviet, and Chinese space programs for commercial launching contracts. The combination of an expanded NASA commitment to unmanned scientific exploration of space and a viable commercial space industry is America's best bet to reach a galaxy of useful technological breakthroughs. **– Rahul Jacob**

BEATING THE BUSY SIGNAL

■ It's a familiar and frustrating scenario: You're at an airport pay phone, dialing furiously, and hear the final boarding call for your flight. Then you get a busy signal on that important call. Aaargh! Relief is on the way, though. Soon you'll be able to record a 20-second message and let the phone redial the number every 15 minutes for two hours until someone answers—at no extra charge.

Smart phones with this new feature are already in use in hotels and businesses around Dallas, where **Intellicall**, their manufacturer, has its headquarters. They can also make collect calls with a recorded operator's voice placing the call in English or Spanish, saving the caller extra charges by avoiding a human operator.

JET PROPULSION LAB—NASA

Intellicall, headed by Chairman A. Michael Adler and CEO R. Stephen Polley, holds 60% of the fast-growing niche for privately owned pay phones. The regional Bell companies can only operate pay phones; they are prohibited from manufacturing and selling them. Sales of Intellicall's smart phones, which cost $1,200 and are bought by businesses that get a slice of the revenues they generate, are filling the company's coin box. For the first half of 1989, sales have almost matched the $37.9 million for all of 1988.

Intellicall's Adler and Polley

– Witten Woods

THE MUPPETS SELL OUT

■ Miss Piggy might snort at the thought of sharing center stage with Minnie Mouse. But she'll have to get used to it because the piggadonna, Kermit the Frog, and scads of other

BY FAYE RICE

CEOs THINK THE SEVEN-YEAR BOOM HAS AT LEAST ANOTHER YEAR TO RUN

■ It was a soft landing, all right. Did anyone even feel it? The revised figures the Commerce Department released in late August for second-quarter GNP growth showed an economy that buzzed the control tower before climbing at a 2.7% rate. No recession this year, folks, and America's top executives are convinced there won't be one next year either. They are right in line with FORTUNE, which believes that a recession is unlikely because the trade deficit is narrowing, consumers and businesses are continuing to spend—albeit cautiously—and employment will stay high.

The executive mood is important because it bodes well for capital spending and other business outlays. As a group the CEOs are upbeat not just about the economy but also about the financial markets: They expect the prime rate to fall slightly by the end of 1989 and stock prices to remain robust throughout 1990. Which is not to say they don't have a few gripes. They are thoroughly fed up with the budget deficit and the profligate Congress. Robert H. Brethen of Philips Industries grumbles, "We need more concrete plans, not conversation." Sara Lee's John H. Bryan echoes the sentiment somewhat more passionately: "It is heresy to say we don't like economic expansion, but it's time for the federal government to set an example for savings."

These are among the results of the latest FORTUNE 500/CNN Moneyline CEO poll. The independent opinion research firm Clark Martire & Bartolomeo conducted the survey of 204 chief executives between August 16 and August 24, the day the Dow Jones industrial average vaulted 12 points above its pre-crash record of 2722, set almost exa[illegible] two years earlier.

The survey found that 59% of the chief executives do not expect a recession to grip the country by the end of 1990. The seven-year economic boom has already survived many predictions of its demise, and these leaders expect it to keep rolling for at least another year. Most would agree with David Kearns of Xerox, who says: "Inflation is under control and we're basically doing okay now. We can probably get through 1990 without any disasters."

"We can probably get through 1990 without any disasters."

DAVID KEARNS
Xerox

ROB KINMONTH

What federal policy moves would be most helpful in extending the current economic expansion? You won't be amazed to hear that 47% of the CEOs want a smaller budget deficit. They have made their dissatisfaction known in previous FORTUNE polls, but now their patience is wearing thin. Without prompting they offer their own prescriptions for shrinkage. Says C. J. Silas of Phillips Petroleum: "Congress cannot balance the budget with mirrors. It must be willing to close extra military bases and reduce weaponry."

Many of Silas's peers concur. "I'm all for the military but not military waste," says Ted C. Wetterau of Wetterau Inc. "We must zero in on businessmen who manufacture the government tanks and ships, and make them learn to be cost-efficient." David Johnson of Gerber Products believes the government will have to improve its own productivity to make a dent in the deficit: "Congress and the President must beat the table and set up better criteria for efficiency. HUD is an example where controls are needed."

When they were polled last December, an overwhelming 68% of chief executives recommended tax increases as well as spending cuts to narrow the middle-aged spread between income and outgo. Somewhat surprisingly, a mere 7% are tax hawks now, but they are resolute. Says Harry Stonecipher of Sundstrand Corp: "The President must have the courage to increase taxes. Otherwise, he will reinherit the wimp image."

Some 36% think the Fed should reduce interest rates to keep the economy chugging along. Says Warren Batts of Premark International: "We should refrain from

Q **Do you expect a recession to begin by the end of 1990?**

A

Yes	**38%**
No	**59%**
Not Sure	**3%**

Q **Where do you expect the Dow Jones industrial average to stand on December 31, 1990?**

A

1500–2000	**6%**
2000–2500	**44%**
2500–3000	**42%**
Over 3000	**5%**
Not Sure	**3%**

Q **Which do you consider the greater threat in the next two years, recession or inflation?**

A

Recession	**60%**
Inflation	**39%**
Not Sure	**1%**

"Industry is stronger than we thought a few months ago."

TOM H. BARRETT
Goodyear

BILL BALLENBERG

tampering too much with the money supply, but we must lower interest rates to stimulate growth and then follow Greenspan's excellent guidelines." Indeed, Chairman Alan Greenspan and his staff at the Federal Reserve earn considerable praise for their deft management.

The optimism is far from universal. Fewer CEOs are bullish now than at the beginning of the year. Last December only 16% believed we would head into a recession during 1989. Now, 38% are fretting about bad times in 1990. Says Rand Araskog of ITT: "I just think all of this debt—federal, junk, and corporate—will catch up with us." He notes that corporate debt has increased some $900 billion during the past five years, while equity has declined $465 billion: "The debt-to-equity ratio has weakened considerably."

He is joined by Robert B. O'Brien Jr. of New Jersey–based Carteret Savings Bank, who believes that the weakness of small business is recession's leading indicator. "The small businessman relies more on bank credit, and he is paying more for it now than he should. He can't pass it along to his customers because his foreign competitors don't have to." But none of the top executives who are predicting a recession for the coming year believe it will be severe. The response of H. Howard Stephenson of Bancorp Hawaii is typical: "I don't think it will be a disaster. It could just be more of a readjustment."

"I'm all for the military but not military waste."

TED C. WETTERAU
Wetterau

For all their short-term optimism, 60% of CEOs think recession is a greater threat to the economy than inflation in the next two years. Here they part company with FORTUNE, which reckons that prices will climb an average 5.5% or worse next year, forcing Greenspan to screw down credit to try to tame inflation without tipping over into recession.

The corporate chiefs anticipate that interest rates will ease before the end of 1989. Nearly two-thirds expect the prime rate will drop from its present 10.5% to a range of 9% to 10%, and some forecast rates below 9%. James Will of Cyclops Industries speaks for the majority: "I think the economy will get more bogged down than some expect, and the Fed will have to do something to crank it back up." He thinks the prime rate will trickle down to about 9.5% by year-end.

A sizable CEO contingent, 28%, is less hopeful. They say the prime rate will remain in the 10% range. "The Fed is still concerned about inflation, and I don't think rates will be lowered until it is statistically satisfied that easing up will be the right approach," says Joseph Pinola of First Interstate Bancorp, headquartered in Los Angeles.

Despite their growing worries about recession, the CEOs are actually more confident than they were two years ago that the stock market will remain strong. Just after the October 1987 crash, more than half the chief executives believed the Dow would be in the 2000 to 2500 range by the end of 1988, and 39% thought it would be lower. Now, 44% of the leaders still expect the Dow to be in the 2000 to 2500 range a year from now, though most speculate that

"The options for risk taking and reward are scarcer than ever."

DAVID JOHNSON
Gerber

LEE BALTERMAN

it will be closer to 2500. Says James Dresher of York International, an air conditioner manufacturer: "The market is just a little ahead of itself now. The economy has been on such a sustained period of growth, the market seems to think there is no end to it, and that is not the real world."

An impressive 47% are more sanguine. They see the Dow above 2500 a year from now. Says Johnson of Gerber, whose number is 2800: "It is the only game in town. There are no more tax havens, so the options for risk taking and reward are scarcer than ever." Tom H. Barrett of Goodyear also thinks the Dow will leap above the present 2700. His reason is that "the economy is not going to collapse on us, and industry is stronger than we thought a few months ago."

Q What do you expect the prime rate to be at year-end 1989?

A

Less than 9%	8%
9%–10%	60%
10%	28%
11%	2%
Not Sure	2%

Q What policy move or moves—by the President, the Congress, or the Fed—would be most helpful in extending the current economic expansion?

A

Reduce budget deficit	47%
Reduce interest rates	36%
Do nothing	17%
Moderate expansion of money supply	14%
Reduce capital gains and other taxes	9%
Reduce trade deficit	8%
Increase saving	7%
Increase taxes	7%
Other	16%

Totals more than 100% due to multiple responses.

THE METHANOL CAR IN YOUR FUTURE

With President Bush urging them on, the automakers are hard at work on a vehicle that will run cleaner—and accelerate faster—than one fueled with gasoline.

■ *by Andrew Kupfer*

MOVE OVER, gasoline. Autos powered by clean-burning alternative fuels are the best means to reduce lung-burning ozone in the many cities where it remains stubbornly above the federal limit. Motorists won't rebel at the change, but quite the opposite: "The new fuels will take the market by storm." Cars will pollute less *and* perform with more pizazz.

Is this Ralph Nader speaking? No, it's your self-proclaimed environmentalist President, George Bush. The most daring part of the clean air plan that he submitted to Congress directs automakers to start selling cars that will run on gasoline substitutes—500,000 units in 1995, rising to one million a year in 1997 and thereafter.

Bush's former sidekicks in the oil patch, who would have to invest billions in new plants to produce alternative fuels, are irate. Oilmen hope to run the new fuels bandwagon into a ditch by devising a cleaner-burning gasoline that could be produced in existing refineries. Under heavy lobbying, the Administration added reformulated gasoline to its list of potential alternative fuels just before releasing details of its clean air bill.

The automakers, which aim to prosper no matter what fuel the government dictates, have been working to solve problems posed by alternative fuels, notably methanol made from natural gas. Anticipating Bush's proposal, Detroit for some time has been developing flexible-fuel cars that can run on gasoline or methanol or blends of the two. Cost: $300 or so added to the car's price.

REPORTER ASSOCIATE *Karen Nickel*

Methanol, made at a Hoechst Celanese plant, looks like water.

JACKSON HILL

Methanol, or methyl alcohol, is the most promising substitute. Indianapolis 500 racers have used it for decades. It's safer: When cars collide, they are far less likely to explode than when using gasoline. It's more powerful and cleaner. Thanks to the fuel's superior combustion and high octane rating, an engine running on it produces up to 20% more horsepower—and up to 90% less ozone. Tailpipe emissions of volatile hydrocarbons, which combine with nitrogen oxides in sunlight to produce ozone, are far lower than with gasoline. Methanol also is much less prone to evaporate and thus produces less smog from fuel escaping to the atmosphere during refueling and when the engine is hot.

So what's the catch? Well, the stuff has a tendency to eat through metal and turn engine oil to mayonnaise. Though cars become more virile on methanol, they gulp lots of it: Because of its molecular structure, the fuel has only 60% as much energy per gallon as gasoline. Anyone worried about dwindling fossil fuels can relax: A given amount of those resources can be turned into enough methanol to do roughly the same amount of work as gasoline, even though the methanol takes up more room. But for motorists, methanol will mean more trips to the filling station.

Washington's ozone fighters are looking at a whole smorgasbord of clean fuels. The most pristine energy, from the user's standpoint, is electricity. As anyone familiar with battery-driven golf carts knows, vehicle emissions are zero. But generating the juice in a coal-fueled plant to charge the batteries can produce plenty of pollution—plus carbon dioxide, which causes global warming. When that's figured in, electric cars are not so pure (see table). A battery that delivers as much energy as just one gallon of gasoline would weigh several hundred pounds. Electric vehicles today have a range of less than 100 miles and take hours to recharge. They wouldn't be much fun to drive either, requiring an eternity by car buff standards—nearly 20 seconds—to accelerate from zero to 50 mph.

continued

Ethanol—which can be thought of as 200-proof vodka—is an efficient, low-polluting fuel. It is less corrosive than methanol, and it packs one-third more energy per gallon. But ethanol, which can be made only by fermenting corn or other crops rich in starch or sugar, costs twice as much per mile as gasoline. And it would take the entire U.S. corn crop to make enough fuel for a quarter of America's cars. Heavily subsidized since energy-crisis days, ethanol is used regionally in small amounts to boost octane in a gasoline blend called gasohol. Corn Belt lobbyists are working through Congress to broaden the subsidy to cover a new smog-fighting gasoline additive derived from ethanol.

TOBEY SANFORD

Another clean fuel: putting natural gas into UPS trucks

A FUEL that deserves a future, especially for urban buses and delivery vans, is compressed natural gas. Carried under pressure in thick-walled cylinders, the stuff already powers hundreds of thousands of vehicles in Italy, the Netherlands, New Zealand, and Canada. It burns cleanly, starts easily, and has an extremely high octane rating (130, vs. about 105 for methanol and the low 90s for premium gasoline). Maintenance expenses would be lower than with gasoline because natural gas is kind to engine oil.

Natural gas is ideal for vehicles that return to a home base every day. Large-fleet owners could save enough on maintenance and fuel costs to pay for converting their vehicles and buying a refueling compressor. Price: $250,000 for one that can refill gas cylinders in a few minutes. United Parcel Service is testing ten trucks altered by Brooklyn Union Gas to make deliveries in the Canarsie section of Brooklyn.

A nasty little PR problem haunts natural gas: fear of explosions. UPS picked Canarsie partly because its trucks wouldn't have to go through New York City's tunnels, where compressed gases are prohibited. But Brooklyn Union has conducted safety tests, including one in which a Mercury Marquis was dropped from 90 feet without damaging the canister. In another a stick of dynamite was taped to the tank and set off, the equivalent of a car hitting a brick wall at 89 mph. Gas leaked out but did not ignite.

The real drawback for drivers is that natural gas is inconvenient. Storing enough of it on board to travel more than 100 miles at a shot is a problem, even when the gas is squeezed to 200 times atmospheric pressure. It might [illegible] years before all filling stations offered the fuel. To keep the option of using gasoline where no gas is available, the car would need separate systems for carrying the two fuels and conveying them to the engine. Along with a gasoline tank, it would also need heavy natural gas cylinders sitting like little zeppelins in the trunk.

Modifying an existing auto to run on natural gas as well as gasoline would cost about $2,000, but far less if cars were mass-produced with dual-fuel capability or designed from scratch for natural gas alone. Since most urban homes are served by natural gas, motorists could install fueling compressors right in their garages. But it might cost $2,000 for one that would take three or four hours to fill 'er up.

SO THE BEST substitute fuel is methanol, also known as wood alcohol—the kind that's bad to drink. A liquid fuel requiring no pressurization, it could be dispensed from pumps alongside those selling gasoline. C. Boyden Gray, the President's counsel, sold his boss on clean fuels when the presidential campaign was getting under way. For five years he has driven a Chevy Citation that runs on alcohol. Tanking up with alternative fuels, Gray says, is a far less expensive way to clean the air than cracking down on small ozone-creating operations like dry cleaners and paint shops. Battling air pollution from any source is an obsession for the lanky, professorial Tar Heel. He picks up a plastic jar with a half-inch or so of nasty black grit on the bottom. "Here, see this," he says. "This is five minutes from a diesel bus. Five minutes!"

Chemical companies make 1.5 billion gallons of methanol a year in the U.S. by combining methane—the main component of natural gas—with steam at very high temperature and pressure. That output the energy equivalent of three days' U.S. gasoline consumption, is used almost entirely by

GASOLINE VS. ALTERNATIVE FUELS

FUEL	VEHICLE EMISSIONS grams per mile				FUEL COST TO TRAVEL 100 MILES	MAXIMUM TRIP ON FULL TANK OR CHARGE	OCTANE RATING
	Hydro-carbons	Nitrogen oxides	Carbon monoxide	Carbon dioxide			
Gasoline*	1.4	.8	7.2	350	$4.00	400 miles	87–93
Methanol	.15–.25	.8	3–7	320	$3.50–$4.25	260 miles	105
Ethanol**	.5–.8	.8	6–8	140–350	$7.50–$9.00	300 miles	99
Natural gas	.15–.25	.8	1–4	300	$3.00–$5.00	100 miles	130
Electricity	.3	1.2	.05	200–300	$2.40–$4.70	60–100 miles	N.A.

*Under rules proposed in President Bush's clean air plan. **Based on a blend of 85% ethanol and 15% gasoline.

Even under proposed new rules, gasoline cars will emit far more hydrocarbons—a precursor of ozone—than those powered with other fuels. Pollution data, from the U.S. Environmental Protection Agency and based on a future 3,000-pound car that has gone 50,000 miles, include evaporation losses.

the chemical industry to make such items as the glue holding plywood together. But methanol could also shave as much as a second off the time it takes production-line cars to go from zero to 60 mph. That is possible, says Roberta Nichols, Ford's principal research engineer for fuel systems, because the fuel burns faster and at a lower temperature than gasoline.

AT THE HEART of the auto industry's plans for methanol is the flexible-fuel vehicle, or FFV. A sensor in the fuel line measures the proportion of methanol and gasoline in the mixture. Its findings are transmitted to a computer chip similar to those on most new cars, which continuously adjust the air-fuel ratio and timing for different driving conditions. If more methanol is coming through the fuel line, the computer lowers the air-fuel ratio and advances the spark to ignite the fuel sooner. Result: more oomph.

FFVs will be costlier because methanol would rot the guts of standard cars. It eats through aluminum, used in gasoline tank linings, and dissolves the rubber in fuel hoses. So automakers will outfit FFVs with stainless-steel tanks; hoses may be made of Teflon wrapped in stainless-steel mesh. Thus the added price of $300 or so. General Motors and Ford are planning to send large fleets of FFVs to California—2,200 and 2,500, respectively—by 1992 to see how they bear up under regular use, especially the fuel sensor. Chrysler, late getting into the game, will be sending out a fleet of ten.

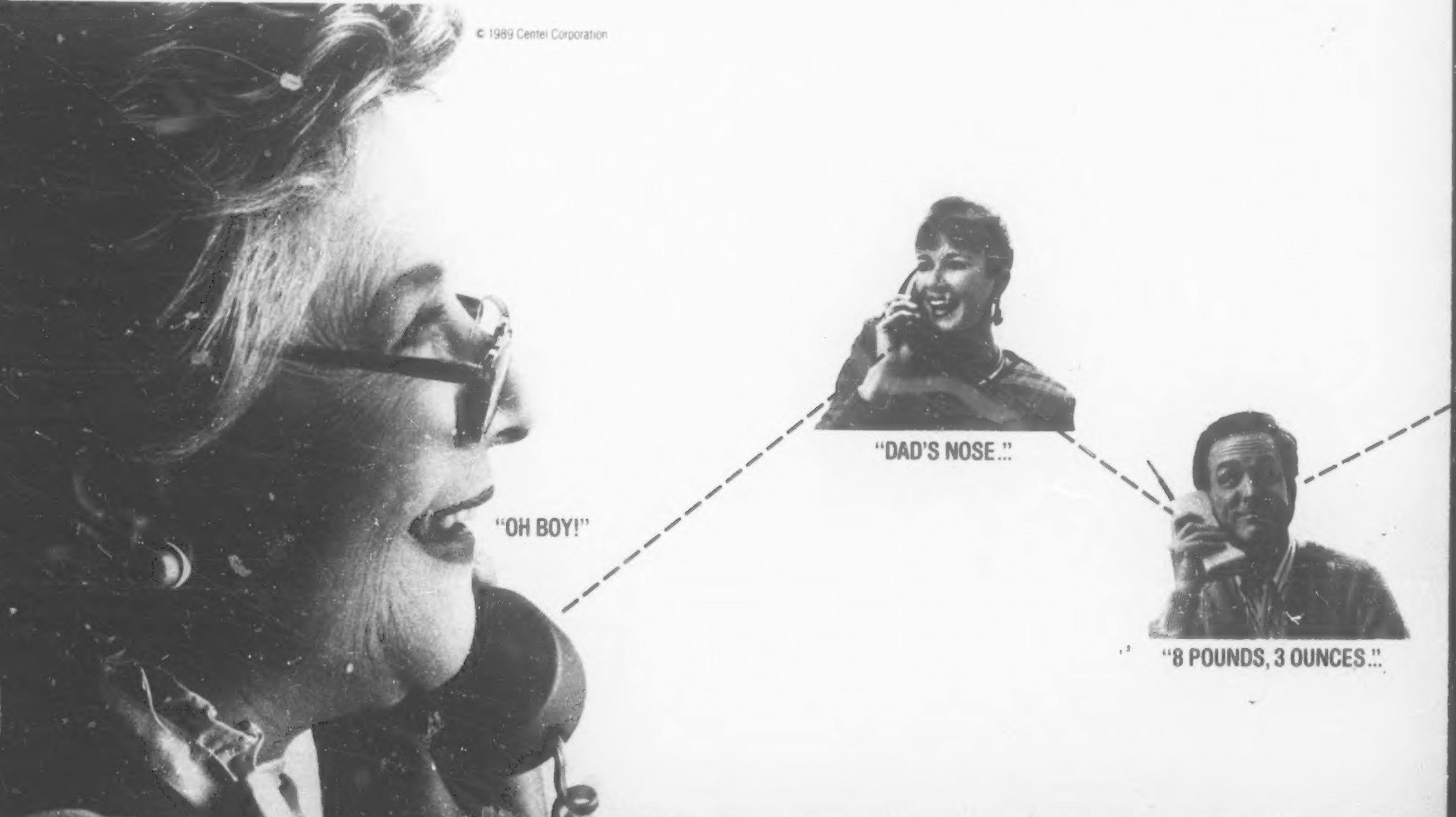
How will Detroit market these cars? All three automakers will emphasize the chance for drivers to do their bit for the planet as well as the cars' potent engines. The performance gains will vary by make.

U.S. GOVERNMENT
EPA1173

MICHAEL L. ABRAMSON

The EPA measures emissions from a methanol car at its laboratory in Ann Arbor, Michigan.

© 1989 Centel Corporation


"OH BOY!"
"DAD'S NOSE."
"8 POUNDS, 3 OUNCES."

For more information write Centel Corporation Dept. A 8725 Higgins Road Chicago IL 60631

Because of methanol's high octane, the engine can be souped up by maximizing the compression ratio—the degree to which the fuel is squeezed before it is ignited—without causing it to knock. Since this change worsens performance when the car is running on gasoline, GM and Ford will leave the compression ratio unchanged. When fueled with methanol, the cars will still get a power boost of up to 7%. Chrysler, playing catch-up, will build FFVs with higher compression ratios, aiming for a 20% jump in power and a ride you can feel in the seat of your pants.

The flexible-fuel approach makes sense because it allows methanol-using vehicles to proliferate before the fuel is available everywhere. The President's bill calls for alternative-fuel vehicles to be sold first in the country's nine most polluted metropolitan regions.* Owners of FFVs will be expected to burn methanol exclusively when driving within these areas. Some states, such as California, may require service stations to sell clean fuels. Outside the designated areas, FFV owners will be able to use gasoline.

WILL FFV OWNERS avoid methanol if gasoline is cheaper? Oil executives grouse that it will cost 20 cents to 30 cents more for an amount that will do the work of a gallon of gasoline; they fear they may have to raise the price of gasoline to subsidize the price of methanol. Chemical companies that make methanol, and which have surplus capacity, say the price should be about the same as premium gasoline.

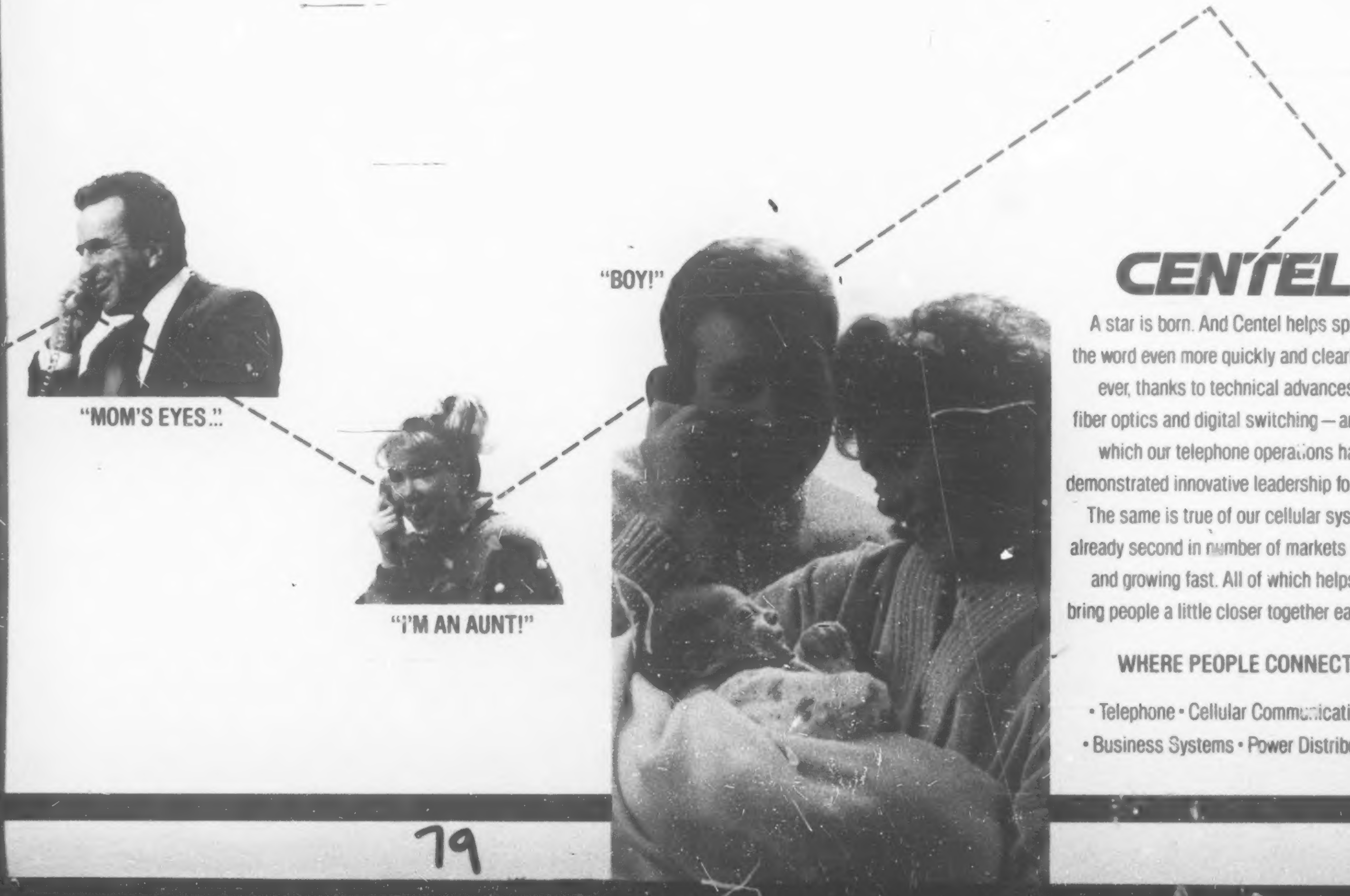
A limited switch to methanol, involving less than a tenth of the new cars sold annually, need not make the U.S. more dependent on imported fuel. Some in the Administration talk of using methanol made from natural gas in OPEC countries that now burn it off as waste, such as Saudi Arabia. But the U.S., Canada, and Mexico could supply all the natural gas needed for the President's clean air plan.

Methanol has its critics, not all in the oil business. Cars fueled with 100% methanol are hard to start at temperatures below 40° F. and require frequent oil changes. Though conventional pollutants would decrease, more of another would issue from the tailpipe—formaldehyde, an eye-stinging smog former that was used to pickle the frog you dissected in high school bio lab and that is now thought to cause cancer. Methanol itself is highly toxic. A jigger or so can kill or blind you. And if you have an accident in bright sunlight, you might get burned by failing to notice methanol's nearly invisible flame.

Automakers are working hard to overcome the problems. New lubricating oils, they hope, will stand up well. To add volume to the fuel tank, Detroit is experimenting with plastic polymers that can be molded to take advantage of every spare nook and cranny under the chassis. Firing up the car in cold weather is easy with a blend of 85% methanol and 15% gasoline, known as M85. It allows quick starts at

---

* *The nine, in order of intensity of ozone pollution: Los Angeles, Houston, New York City, Milwaukee, Baltimore, Philadelphia, Hartford-New Haven, San Diego, and Chicago.*



"MOM'S EYES..."
"I'M AN AUNT!"
"BOY!"

CENTEL

A star is born. And Centel helps spread the word even more quickly and clearly than ever, thanks to technical advances in fiber optics and digital switching—areas in which our telephone operations have demonstrated innovative leadership for years. The same is true of our cellular system, already second in number of markets served and growing fast. All of which helps us bring people a little closer together each day.

WHERE PEOPLE CONNECT

• Telephone • Cellular Communications •
• Business Systems • Power Distribution •

Beyond our everyday world is there another world... waiting to be explained?

New from

TIME LIFE

MYSTERIES OF THE UNKNOWN

A serious look at a world you can no longer ignore!

Examine staggering new evidence that an unseen world exists beyond nature as we know it. Ancient earth energies. Psychic powers. UFOs. OBEs, NDEs and reincarnation. One by one, the mysteries unravel in a new series from TIME-LIFE BOOKS.

Never has such a wealth of fully documented intelligence been assembled in one place. Volume by volume, MYSTERIES OF THE UNKNOWN lets you share new information and the latest scientific findings, first-hand experiences and rare photographs—so that you can evaluate the evidence yourself.

For 10 days FREE, travel to the most mysterious places on earth!

Explore *Mystic Places*, your first volume, free, and take a fresh look at Stonehenge and the Atlantis myth. Decode the secrets that lie buried in Egypt's Great Pyramid. Assess theories that may explain Peru's Nazca lines. Probe the riddle of the Mary Celeste... the Bermuda Triangle... and paranormal events associated with Britain's mysterious leys.

Continue with *Psychic Powers, The UFO Phenomenon, Psychic Voyages* and *Cosmic Connections*. Collect a volume about every other month. Examine each one free for 10 days. Keep it and pay just $12.99 plus shipping and handling. Buy as many as you want. Cancel at any time.

To explore worlds beyond our everyday world, call the toll-free number now.

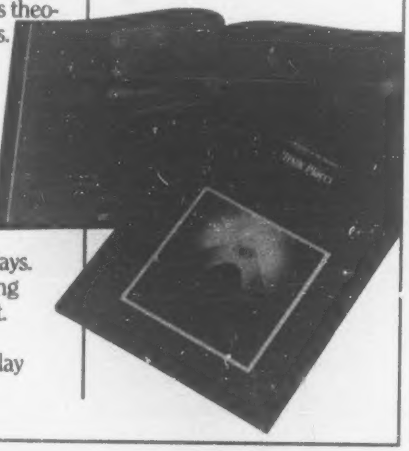
Each revelation-packed volume: Up to 160 pages • 9¼ by 11⅛ inches • More than 100 illustrations, many in color.

To explore *Mystic Places* FREE for 10 days, call toll-free 1-800-445-TIME.

(11:00 a.m. to 11:00 p.m. EST)

For Customer Service, call toll-free 1-800-621-7026

Or write: TIME-LIFE BOOKS
Branch: D7CP51 Box C-32067
Richmond, VA 23261-2067



© 1989 TIME-LIFE BOOKS INC.

temperatures down to −20° F. and burns with a bright yellow flame. Using M85 instead of pure methanol, however, has a price: The reduction in smog falls from 90% to 50%.

California has set strict standards for formaldehyde emissions, which automakers will control with redesigned catalytic converters. Converters installed on today's conventional cars can meet the standard when new, but fall short by the time the car has reached 50,000 miles.

Detroit is also taking steps to make sure drivers don't take a fatal swig of wood alcohol. Fuel most commonly enters the body when a motorist siphons it from a tank; an estimated 14,000 Americans a year swallow gasoline while sucking on a tube to get the siphoning process started. Automakers will install strainers in the mouth of the tank to prevent drivers from having the drink to end all drinks.

BIG OIL, its livelihood at stake, hopes to head off alternative fuels with revamped gasoline. In August, Arco announced a new lead-free gasoline for pre-1975 cars without catalytic converters. It cuts tailpipe emissions by 15%. For newer cars, oil companies might try to get rid of gasoline's more volatile components and add oxygen-rich chemicals made from methanol and ether that make fuel burn more fully and boost octane.

Top engineering officials from the oil and auto industries are holding a series of meetings to discuss new formulations and changes necessary in engines to help the redesigned fuels work better. Says Jim White, in charge of Arco's alternative-fuel project: "We think that methanol is a fuel of the future. We just don't think it's *the* fuel of the future. We'd rather have the chance to fool around with our gasoline."

The EPA doubts that cleaner gasoline could cut pollutants from newer cars by more than 15%. Even if the oil companies can make gasoline cleaner, at least one authority in Detroit thinks it's worth going the extra mile with methanol. "We certainly are supportive of the oil companies' efforts to make clean gasoline," says Ford's Roberta Nichols. "But we still see methanol as the replacement in the long term. And in the short term methanol would still have the advantage in air quality and higher power." The payoff in more breathable air alone seems well worth the expense. ■

HOW TO BREAK THE SOFTWARE LOGJAM

Programming takes longer—and costs more—than most computer users expect. Don't count on a high-tech fix. Smarter management can unclog the bottlenecks. ■ *by Brenton R. Schlender*

SOFTWARE IS HARD. Just ask Jim Wile, senior business systems analyst at the Board of Water & Light in Lansing, Michigan. Since 1985 he has been working on what looked like a simple enough task: designing new computer software so the utility can combine charges for water and electricity service on a single monthly statement instead of mailing out separate bills for each. The original timetable called for the work to be done in two years. So far Wile and his programmers have spent more than 40 man-years and $2 million on the project. He suspects it will take half again that much work and another $1.5 million before the utility can finally start saving itself and its customers some postage stamps.

What appeared a straightforward technical task turned out to raise a broad range of management questions. "The whole project amounted to a philosophical change at the company, not just new software," says Wile. "It took many hours of debate, sorting through a ton of procedural issues, and it required policy decisions completely unrelated to the actual coding. And now we've spent nearly five years without any deliverable benefit."

Wile and his crew are victims of the software bottleneck that is squeezing just about every organization that relies on computers. Software is the taskmaster that tells computers what to do and how and when to do it. Without it, a computer might as well be a doorstop. But as computers grow more powerful and user demands grow more sophisticated, the process of developing new software and of maintaining and modifying old systems has turned into an exercise in frustration, in some cases at the cost of tens of millions of dollars and squandered business opportunities.

Wile's experience underscores what many companies are discovering: The software monster is easily as much a managerial problem as a technical one. Following half a dozen simple guidelines can help managers free programmers to work more effectively. For executives who need outside help, a whole industry has sprouted to provide services from project management advice to "body shops" of temporary programmers. If the mess looks truly hopeless, as a last resort there's even a Red Adair of software—so nicknamed after the famous douser of intractable oil well fires.

On the technical side, companies are inventing new programming languages and computerized tools that streamline the writing of software code. The federal government, which pays for a quarter of all programs, has chartered think tanks to study development methods and rate software contractors. And companies that use lots of software are setting up repositories of proven code that can be reused in new applications so that programmers don't have to start from scratch each time out.

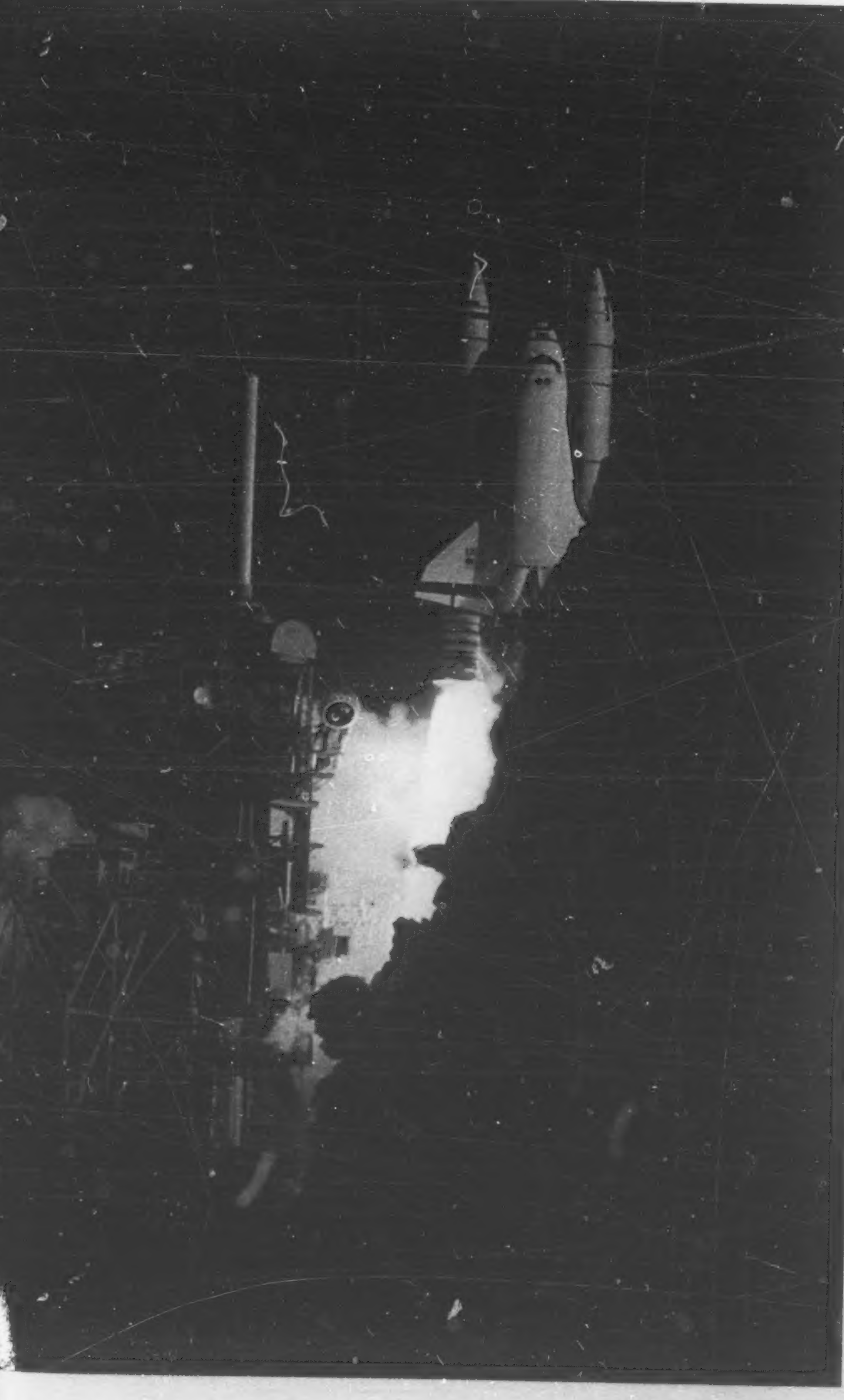
None of this comes any too soon. Software logjams contributed to the delayed debut of the awesomely complex B-2 Stealth bomber, and the sheer logistical horror of writing tens of millions of lines of code helped sidetrack Star Wars. Not even companies whose sole business is writing programs have escaped unscathed. Two of the most successful personal computer software makers—Lotus Development, creator of the 1-2-3 electronic spreadsheets, and Ashton-Tate, best known for d-Base—have suffered costly, embarrassing holdups getting the latest versions of their flagship products out the door.

BRIAN SMITH

LOTUS 1-2-3, VERSION 3

Lines of code	Labor required	Development cost	Cost of quality control testing
400,000	263 man-years	$7 million	$15 million

To get the bugs out, Lotus spent millions in this room testing the latest version of its popular 1-2-3 electronic spreadsheet on virtually every IBM-compatible machine.



MIKE BROWN—GAMMA/LIAISON

The stakes are vast. The U.S. will spend $112 billion this year on software. The Pentagon alone accounts for $30 billion—10% of the 1989 defense budget. Software is one of the biggest corporate capital outlays: Merrill Lynch shells out $160 million each year on software, while United Airlines' Covia subsidiary spends $120 million a year maintaining and updating software for its Apollo reservation system. The backlog of overdue and overbudget projects keeps growing. Says Capers Jones, chairman of Software Productivity Research Inc. in Cambridge, Massachusetts: "All over the world senior executives and government officials are wondering why software development is so expensive, why it takes so long, and whether there is any reasonable prospect for improving its economics."

WHY IS SOFTWARE such a tar pit? For decades software specialists have pinned the blame on the nature of the beast itself. As one expert puts it, software is "pure thought stuff," so conceptual that designers can't draw explicit, detailed diagrams and schematics—as creators of electronic circuits can—to guide programmers in their work. Consequently, routine communication among programmers, managers, and the ordinary people who use software is a chore in itself. "Making software is unlike any other business activity," says Michael Hammer, a corporate computing consultant also in Cambridge. "Imagine putting together an instruction manual on how to assemble a car for someone who had never even seen one. That's what you're doing when you write a program."

While the performance bang per buck's worth of computers doubles every three years or so, improvements in software productivity chug along at a far more modest 4% annual rate. Frank King, senior vice president of software products at Lotus, contends that building a new program takes a lot more work than designing a new chip. "The labor content in large systems like

SPACE SHUTTLE

Lines of code	Labor required	Development cost
25,600,000	22,096 man-years	$1,200 million

Because lives are at stake, the space shuttle contains some of the longest, most sophisticated, and most expensive software programs yet developed. It took a cast of thousands to do the job.

those in the space shuttle is equivalent to what it took to build the Great Pyramid," asserts Jones, whose firm analyzes such statistics. "Big corporate systems take hundreds of people eight or ten years to build." To make matters worse, top-notch programmers and project managers remain in short supply.

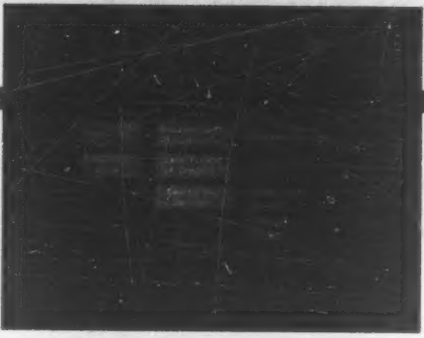
The design of a program can take systems analysts months or even years, but it is the actual coding and testing that really burn up the man-hours. Programmers take a design that is described only in general terms and turn it into massive lists of thousands—sometimes even millions—of meticulously detailed commands, an extended string of decision trees that tell the computer exactly what to do in every circumstance.

To do this, programmers use personal computers or technical workstations to write, edit, organize, and test the discrete pieces of code so they not only function efficiently but also dovetail with the rest of the program. The trick is to make each piece as compact as possible, eliminating redundant commands and functions. The hard, often mind-numbing work requires absolute concentration. System designers frequently make the job even more frustrating by adding new functions late in the process, which forces programmers to go back and rejigger what they've done before.

1989 LINCOLN CONTINENTAL

Lines of code	Labor required	Development cost
83,517	35 man-years	$1.8 million

Cars can't run without software these days. On this $29,000 luxury sedan, programs control the digital dashboard, brakes, air bag, door locks, steering, suspension, engine, and air conditioner.



TOBY SANFORD

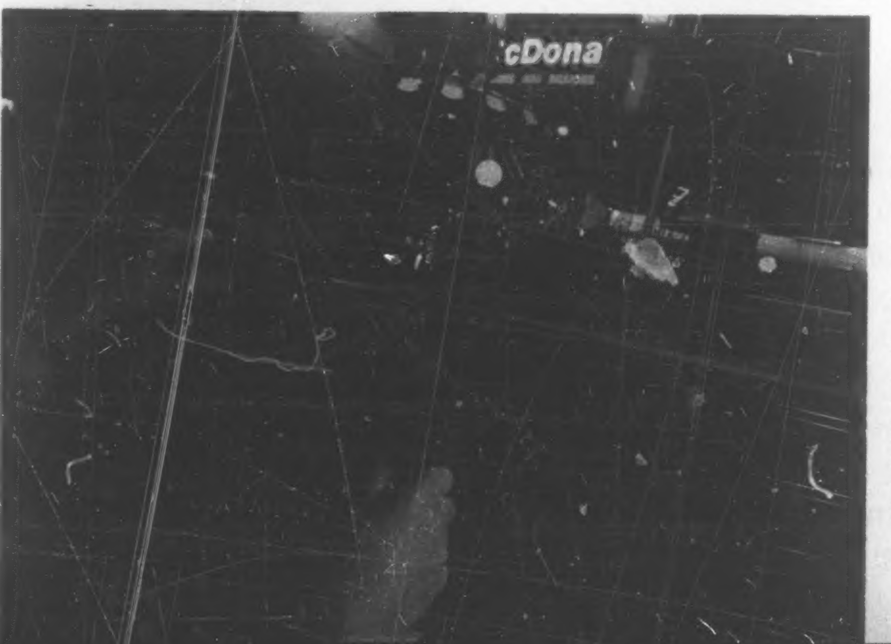
CITIBANK TELLER MACHINE

Lines of code	Labor required	Development cost
730,000	150 man-years	$13.2 million

Citibank's automated touch-screen teller machines speak three languages and rely on nearly as many lines of software code as there are listings in the Manhattan telephone directory.

The accompanying charts and photographs illustrate just how much labor and expense went into building the software that controls a variety of familiar computerized devices, from the space shuttle to a supermarket checkout scanner. In each case, Capers Jones's firm provided the estimates of cost and man-years of effort. All but Lotus 1-2-3 include quality control testing in the development cost.

For all the technical problems, the biggest obstacles to effective, economical software development are managerial. In case after case, the cause of delayed or botched software invariably boils down to bad planning, organizational rivalries, unrealistic scheduling, or the inability of techies to grasp the business problems they are trying to solve. "Software may be complex, but it isn't a black art," says Watts S. Humphrey, director of the software process program at the Software Engineering Institute at Carnegie Mellon University in Pittsburgh. "All those good management practices that apply to factories and engineering work for software too. But these are not things that technical people in the bowels of companies have been trained to do."



KENNETH CHEN

Humphrey's institute was founded in 1984 after the Pentagon declared itself mired in a software crisis. Since then he has studied how well hundreds of government software projects were run. His conclusions are sobering: Two-thirds had no formal procedure for estimating the amount of labor or code required, and nearly half had no standard way to predict the cost of a program. Small wonder that the Air Force complains of a four-year backlog or that other studies show that one in four military software projects is simply abandoned.

NOWADAYS computers and software are integral to just about every weapons system except a grunt's rifle. But unlike a spreadsheet or a word-processing program, military software must operate without flinching in the most harrowing conditions. Big weapons systems require more programming code than just about any other user of software. The B-2, for example, has 200 computers and tens of millions of lines of software instructions. "To visualize a million lines of code, think of this," says Humphrey, "the Manhattan white pages has about 868,000 listings."

Adds Geoffrey W. Turner, a former naval intelligence officer: "These systems are so big that no single person can truly understand them, so you have to wonder if they can be managed at all." Now a consultant for SRI International, a research institute in Menlo Park, California, Turner spent many of his 14 Navy years working on software that manages the U.S. strategic nuclear war plan. Says he: "Watching the process from the inside, I was alarmed that nobody had any real idea of what it was we were building or how it would work."

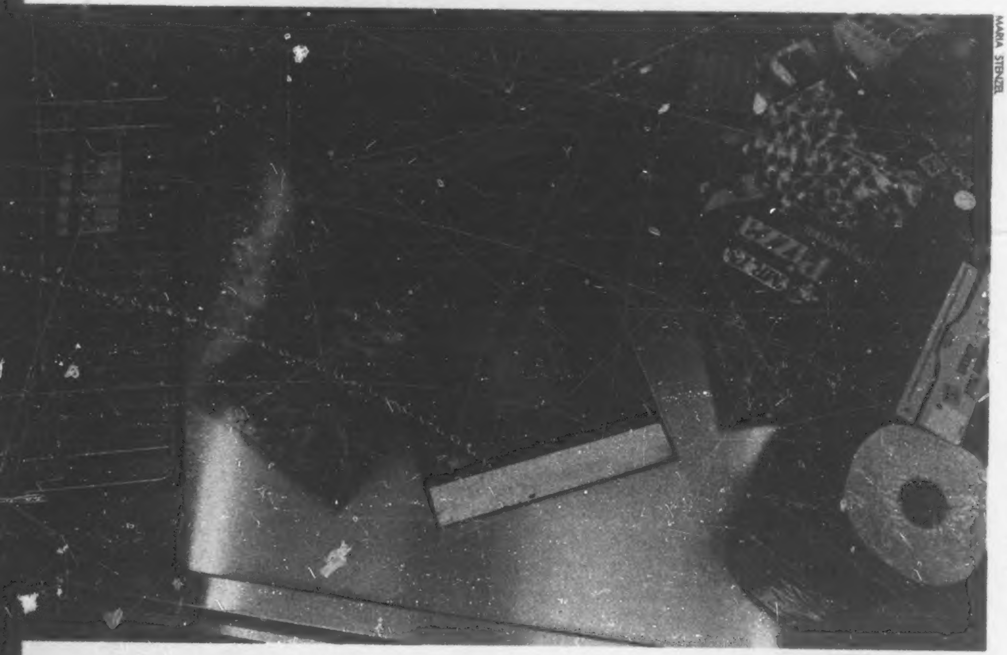
Happily, most corporations don't have to worry that software screw-ups might inadvertently ignite World War III. Their most vexing concern isn't building new programs at all, but maintaining and modifying old software. According to KPMG Peat Marwick's information technology group, this

---

REPORTER ASSOCIATE *Philip F. Newman*

consumes about 80% of most corporate software budgets. "Much of the automation of major corporations was done in the 1960s and the 1970s," says DuWayne Peterson, a Merrill Lynch executive vice president in charge of technology. "These big, old systems are Frankenstein monsters, patched and redone." Modifying them, he says, "is like performing a heart transplant. The new heart isn't the problem, it's connecting it up so it won't get rejected."

With what little resources they have left, corporate software developers try to create new services for management. At a bank, that might mean designing a new type of account or loan. An airline might add car-rental booking to the reservation system. But often new software changes the way an enterprise does business. Sun Microsystems Inc. learned this lesson recently when a new system designed to direct salesmen's orders automatically to computer assembly lines disrupted manufacturing procedures. As a result, the highflying Mountain View, California, company, which hadn't posted a loss since 1982, abruptly fell into the red last quarter.



MARIA STENZEL

IBM CHECKOUT SCANNER

Lines of code	Labor required	Development cost
90,000	58 man-years	$3 million

The speedy software in IBM's beeping point-of-sale scanners shortens the checkout lines in supermarkets and helps improve accuracy. This one is at a Food Lion store in Hagerstown, Maryland.

Computers are so powerful today that they can go beyond inventory control and other conventional processes to provide new strategic business advantages. That sounds inviting, especially to technologically adept CEOs who want to get more value out of expensive systems. But it can intimidate existing organizations, managers, and staffers who are loath to let a mere computer dictate changes in the way they do business.

When such sweeping, strategic systems go awry, the costs can be staggering. BankAmerica Corp. has been stung twice in recent years, at a cost of more than $100 million. The first snafu, in 1987, involved an innovative system for managing institutional trust accounts that was rushed into operation, only to snarl the records of some important customers. BankAmerica ultimately abandoned the system, which cost more than $20 million, and switched to another after reserving $60 million to cover potential losses. Then, late last year, a subcontractor the company had hired to process federally guaranteed student loans for a group of big banks had a computer failure when it tried to switch to a more advanced version of its software. That led to possible loan losses and administrative and legal costs as high as $650 million. The government refused to bail out the banks. The problem accounted for much of the $96 million BankAmerica set aside last winter to cover various potential losses.

More often software fiascos resemble what happened to Lansing's Board of Water & Light, where a seemingly simple effort to consolidate some accounting procedures spiraled out of control, taking more than twice as long and costing over twice as much as anticipated. KPMG Peat Marwick's technology services division calls these projects "runaways" and estimates that more than 30% of all companies fall victim to them.

It's James A. Willbern, a Dallas-based national director for KPMG Peat Marwick, who bills himself as the Red Adair of runaway computer systems. He and his team of 35 specialists usually arrive on the scene to rein in an errant project when all else has failed. The Lansing utility is one of his smaller clients. "I'm continually amazed at the size of some of these projects," he says. "We're looking at a project for a new switching system at one of the Bell companies that will run into hundreds of millions of dollars." This client took the precaution of consulting Willbern early, in hopes of preventing a runaway. Willbern's business is booming, as is the whole industry that provides software and management services to companies: Last year it took in $11.1 billion in revenues, according to International Data Corp., and it's growing 16% annually.

TO BRING ORDER to its product development division, Lotus hired Frank King last year from IBM, where he had been in charge of developing complex database software for mainframe computers. He found haphazard project management, but more nettlesome were a slew of problems unique to the PC software industry. PC software companies must make sure their products will work on thousands of different but supposedly compatible PCs and peripherals. Because these companies hope to sell their programs to millions of customers, no two of whom use them the same way, their products must be hardier than custom-designed programs for a single buyer. All told, Lotus spent $15 million testing a new version of its popular 1-2-3 spreadsheet, which reached the market over a year behind schedule. More than anything, says King, it's a question of managing quality control.

What is the hapless software consumer to do? Technical help is on the way in several forms, including CASE (computer-aid-

I thought my wife was just forgetting things.

Then she forgot my name.

ALZHEIMER'S ASSOCIATION
Someone to Stand By You.
1-800-621-0379
(In Illinois 1-800-572-6037)

© 1988 Alzheimer's Disease and Related Disorders Association, Inc.

ed software engineering) tools that use software to build new software, as well as innovative languages and techniques like object-oriented programming that make it easier to reuse blocks of code for basic word-processing. Besides technology, though, the experts say good old-fashioned management can go a long way toward easing the problem. Here are a handful of their specific suggestions:

- **Give data-processing departments the same clout as everybody else.** "I'm a peer of the business guys, and that's the way it should be," says Merrill Lynch's Peterson. Putting corporate data-processing departments on an equal footing with other business units gives software projects the imprimatur of top management. This is especially important when new software will force changes in business procedures.

- **Keep both managers and ultimate users involved in every step of software development.** "It can't be a we-they approach, it's got to be *us*," says Max Hopper, senior vice president for information systems for American Airlines. He runs Sabre, the world's largest computerized airline reservation system. Hopper adds, "Too often the high priests in the centralized data-processing departments try to come up with new systems without including the business people in the process."

- **Make data-processing managers periodically work side by side with software users.** "You have to get outside," says Ann Beadle, second vice president for group pensions and information systems at Unum Corp., a Portland, Maine, insurance company. She recently helped install--on time and within budget—a complex software system to manage employee pension plan investments for Unum's customers. Her previous stint managing the 401(k) pension plan for Unum's own employees gave her an insider's feel for the problem.

- **Break up big projects to keep programming teams small.** "That's what I would do next time," says Wile, the Michigan utility software analyst. The optimum size for a team is five to ten members, mainly because management and communication get cumbersome in larger groups. Besides, it is easier to measure progress in a smaller project. "You have to remember that software people are very goal oriented and like to see results," Wile says.

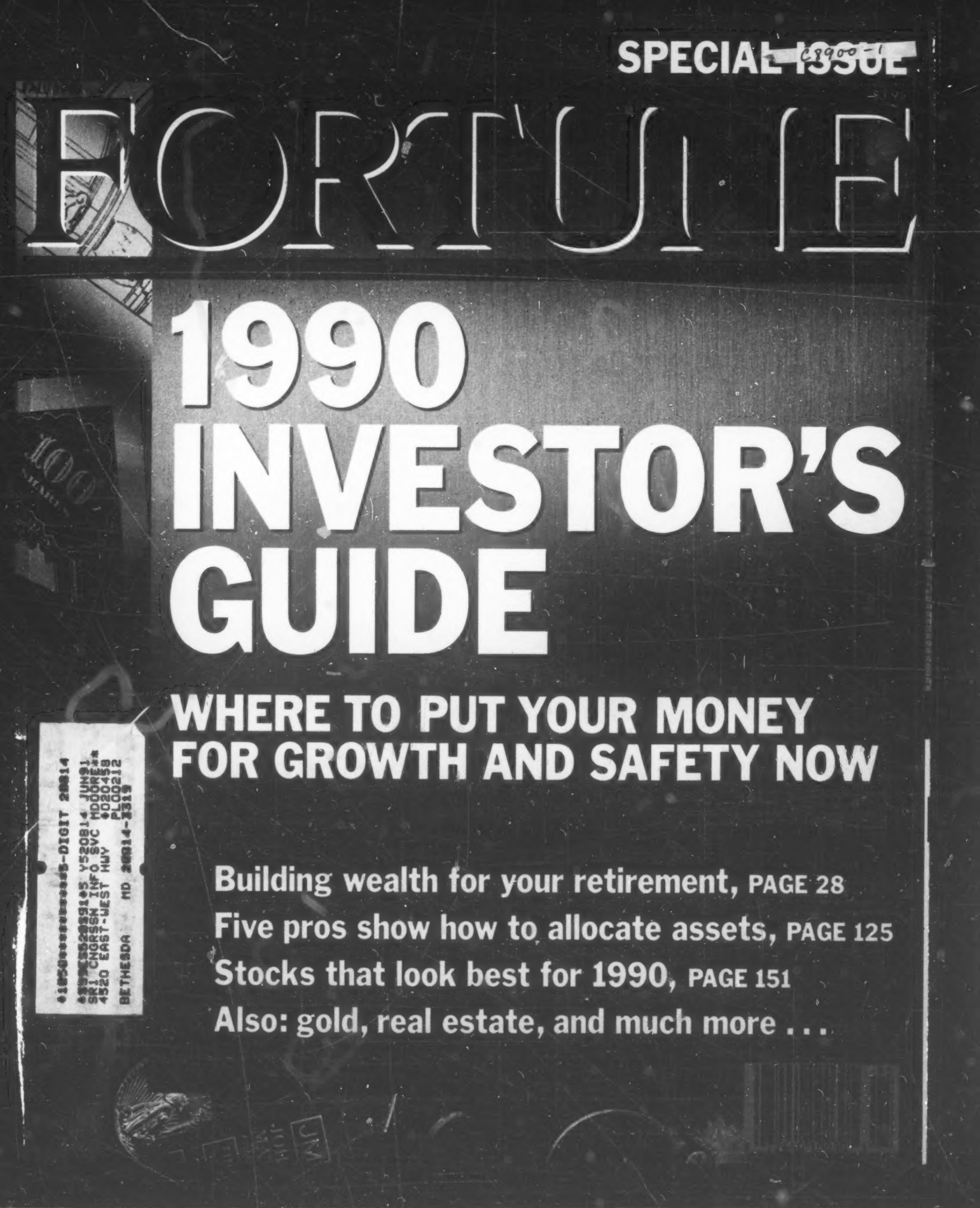
ALAN D. LEVENSON

James Wilbern: the Red Adair of software

- **Give programmers elbowroom.** One of Capers Jones's productivity studies shows that a programmer or analyst who has 100 square feet of office space is twice as productive as one squeezed into 40 square feet. Programmers packed into tight quarters are easily distracted, and they need lots of room to spread out reference materials. IBM kept this in mind when it built its massive Santa Teresa Laboratory in San Jose, California, where it conducts much of its software work. The rambling structure, unofficially dubbed the Martian Embassy, gives programmers plenty of room, bucolic outdoor lounges, and lots of natural light.

- **Make existing software easier to maintain.** Companies should transform dated code into fresher versions more attuned to today's computers. A whole industry, which Jones calls "geriatric care for aging software," now provides services that make this easier. The process is expensive but usually worthwhile.

Ultimately, executives have to recognize that they can't count on a technological silver bullet to slay the software dragon. Despite the promise of new tools and innovative programming techniques and management, software remains the most complex and abstract activity man has yet contrived. Getting the job done will always come down to patience, ingenuity, and lots of elbow grease. F



SPECIAL ISSUE

C8900-1

FORTUNE

1990 INVESTOR'S GUIDE

WHERE TO PUT YOUR MONEY FOR GROWTH AND SAFETY NOW

Building wealth for your retirement, PAGE 28

Five pros show how to allocate assets, PAGE 125

Stocks that look best for 1990, PAGE 151

Also: gold, real estate, and much more . . .

*1850********5-DIGIT 20814
#59MES5205591#5 Y520814 JUN91
SR1 CNGRSSN INFO SVC MD00RE**
4520 EAST-WEST HWY *D20458
PL00212
BETHESDA MD 20814-3319

FALL 1989

FORTUNE

EDITOR'S DESK 4

INTRODUCTION: WHAT TO TELL THE KIDS ABOUT INVESTING 8

INVESTMENT STRATEGY AND VEHICLES

SAFE STOCKS FOR AN UNEASY BULL MARKET 12
Look for companies whose earnings will keep growing if the economy slows, says FORTUNE's latest strategy guide. *by John J. Curran*

LONG-TERM BONDS ARE TOO RISKY NOW 22
They'll take a beating if interest rates rise. Short-term securities are less volatile and they pay just as much. *by John J. Curran*

REAL ESTATE: FINDING BUYS IN THE RUINS 24
A U.S. glut of office space keeps prices soft. Equity REITs have climbed this year, but bargains remain. *by John J. Curran*

WAITING FOR GOLD TO COME BACK TO LIFE 25
Bullion bulls say the price can't slide much more than it already has. *by Ellen Schultz*

HOW TO PLAN NOW FOR YOUR RETIREMENT 28
Whatever your age, look to a portfolio heavily laden with stocks to best preserve and enhance your prosperity. *by Robert J. Klein*

INVESTING FOR BABY'S B.A. 44

MANAGING YOUR COMPANY PLAN 48

SURVIVING A BEAR ATTACK 65
When the market starts mauling your portfolio, here's what to do. Invest for the long term—and hang on. *by Christopher Knowlton*

FIRST AID FOR A BEAR BITE 76

ARE THESE THE NEW WARREN BUFFETTS? 79
The dozen young investment managers you'll meet here are brainy, ethical, and good at making money grow consistently. They've invested the bulk of their assets right alongside those of their customers. *by Brett Duval Fromson*

AND NOW, LOOK AT THE OLD ONE 98

THE SMART WAY TO GO GLOBAL 103
Whether you live in Tulsa, Toulouse, or Tokyo, investing abroad is getting easier—and finding bargains harder. These days the pros are advising Americans to keep 75% of their money in their own country. *by Brett Duval Fromson*

HOW TO INVEST IN A STARTUP BUSINESS 115
The reward of betting on a new venture can be as great as the risks. Hunting the right deal takes time, so be patient, pick carefully, travel in a pack, and don't get sucked into underwriting your brother-in-law. *by Alan Deutschman*

Stocks can soar in defiance of all the standard value measures if there's enough money around. Right now that kind of cash isn't in evidence.

PAGE 12

"The biggest risk at 65 is to put your money to sleep. You have the problem [illegible] your purchasing power being eroded by inflation. Call it the Aunt Tilly effect."

PAGE 28

COVER: The photographs were taken by Rita Maas.

VOL. 120, NO. 10

FIVE INVESTMENT PORTFOLIOS

ALLOCATING YOUR ASSETS BY LIFE'S SEASONS 125
Five experts suggest how to balance your investments for growth and safety as your age and circumstances change. *by Terence P. Paré*

AGE 30: SINGLE, JUST GETTING UNDER WAY 128

AGE 40: MARRIED WITH KIDS 2 AND 4 132

AGE 50: RICH, WITH THREE TEENAGERS 136

AGE 60: A WIDOWER, NO DEPENDENTS 140

AGE 70: A DUO COMFORTABLY RETIRED 142

THE OUTLOOK

FORTUNE FORECAST: 1990 WILL BRING BETTER RETURNS 147
With recession unlikely, interest rates will rise. Profits will recover from a bad year, but judging the quality of those profits will be more difficult than it used to be. *by Todd May Jr.*

PROMISING INDUSTRIES FOR 1990 151
Whether it's cellular phones, air safety, or color copying, these fast-growing industries should outstrip the stock market. *by Brian Dumaine*

STOCKS THAT SEEM CHANCY 179
This year made some weak shares look good. Next year may not be so easy. *by Ronald Henkoff*

TAXES AND INVESTING

KEEPING DOWN ESTATE TAXES 189
Changes in federal law make providing for your heirs trickier than ever. *by Anne B. Fisher*

STATES AND YOUR ESTATE PLAN 198

TAX TIPS FOR TRYING TIMES 201
Despite congressional confusion, investors should do what makes sense. *by Jennifer Reese*

THE AMT TRAP IN THE TAX CODE 204

SOURCES OF HELP

PORTFOLIO MANAGERS FOR EVERYMAN 207
Yes, you can find an expert to handle as little as $25,000 or $50,000. *by Anne B. Fisher*

CLIMBING HIGH WITH DISCOUNT BROKERS 219
They're not all alike, and the differences can save you a lot. *by Ellen Schultz*

GETTING THE MOST FROM A FULL-SERVICE BROKER 222

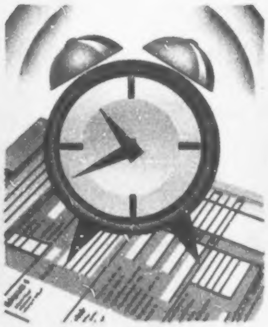
INDEX 224

"You don't need a rocket scientist. Investing is not a game where the guy with the 160 IQ beats the guy with the 130 IQ. Rationality is essential."

PAGE 79

"Dying ain't nothing compared to figuring out the tax code. Dying in the next ten years would be real bad tax planning."

PAGE 189



"The home-mortgage interest deduction is going to go. Now that the lawmakers have established the principle, they can chip away."

PAGE 201

"I started in this business during the bear market. My motto is 'It isn't how fast you run up the mountain. It's making sure you don't fall even once.' "

PAGE 207

EDITOR-IN-CHIEF Jason McManus
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin
TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITOR Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, John J. Curran, Marta F. Dorion, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr., Louis Kraar, Kenneth Labich, Colin Leinster, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Bill Saporito, Stratford P. Sherman, Lee Smith (Washington)
SENIOR EDITOR John F. Lawrence
ASSOCIATE EDITORS Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Alan Farnham, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, CA), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Alicia Hills Moore, John Paul Newport Jr., Robert E. Norton (Washington), Peter Nulty, Brian O'Reilly, Nancy J. Perry, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Lenore Schiff, Brenton R. Schlender (San Francisco), Patricia Sellers, Andrew Evan Serwer, Thomas A. Stewart, Alex Taylor III, Shawn Tully (European Editor), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITOR Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Mark M. Colodny, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Laurie Kretchmar, Susan E. Kuhn, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo), Richard S. Teitelbaum
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Charles J. Attardi, Leslie Brenner, Jonathan Brown, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Scott Kelliher, Simone M. Kilian, Daniel Lawrence, Michelle Lockhart, Frances Owles, David V. Rile, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CONSUMER MARKETING DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

That giddily surging stock market of early October made many investors both eager and anxious. Should they buy? Sell? Or just pray that October 1987 wasn't about to happen all over again? Our fifth annual Investor's Guide provides a treasury of answers—and the timing couldn't be better. This special issue also reminds us of some fundamental principles, notably that in a volatile economic environment, allocating your assets with an eye on the *long term* is the only sensible approach.

Keith Johnson, a member of FORTUNE's board of editors, assembled and directed a crew of more than 40 for this year's Investor's Guide. Says Johnson, who has been in charge of each of the five Guides: "If you look to the long term, you're almost certain to come out ahead. And you should be able to hear the news that the Dow has dropped 500 points and—if not laugh—at least not cry."

Two principal members of Johnson's team are Edmund Faltermayer, who has edited FORTUNE's Personal Investing column for seven years, and John Curran, our senior investment writer. Faltermayer served as editor of Curran's quarterly report on investment strategies, among other stories. Curran was the author of three of the four articles identifying strategies for today's markets and edited three other stories on building assets for retirement, paying for college tuition, and making the most of a company savings plan. He bought his first share of stock at age 12 and has been writing about the markets since 1976. He's a firm believer in consistency and in waiting for the right opportunities to come along. "We're trying to teach people not to go for the big kill," he says. "Stocks are not as risky as some people believe, and they are more rewarding than some people believe. But you need to think long range."

This year's Guide also investigates a broader variety of investments than before, from writer Brett Fromson's story on opportunities overseas, "The Smart Way to Go Global," to reporter Alan Deutschman's article, "How to Invest in a Startup Business," which may help you fend off anybody who wants you to help finance a diner serving Rumanian-Thai cuisine.

Bringing visual elegance and continuity to such a breadth of material was the challenging task of designers Frances Fifield and Jim McManus. "It's difficult and demanding to create a look that works in so many different situations," says Fifield. But we think she has—and that you will find the Guide attractive, timely, and useful.

Marshall Loeb
MANAGING EDITOR

NINA BARNETT

Johnson (foreground) with key members of the special issue staff

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President; Joseph A. Ripp, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, Fla. 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-621-8000. © 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company. **For subscription queries, call Customer Service at 1-800-621-8000.**

Your Sun Benefits
1986 Benefits Report
Tax Reform

MANAGING YOUR COMPANY PLAN

Whether you're a loyal company man or a career grasshopper, you can do plenty of things to get more bang from your company savings plan. First among them: Understand the types of plans you are dealing with. They come in several varieties, and they differ in important ways—such as who makes the contributions, how they are taxed, and how much money can go into them each year.

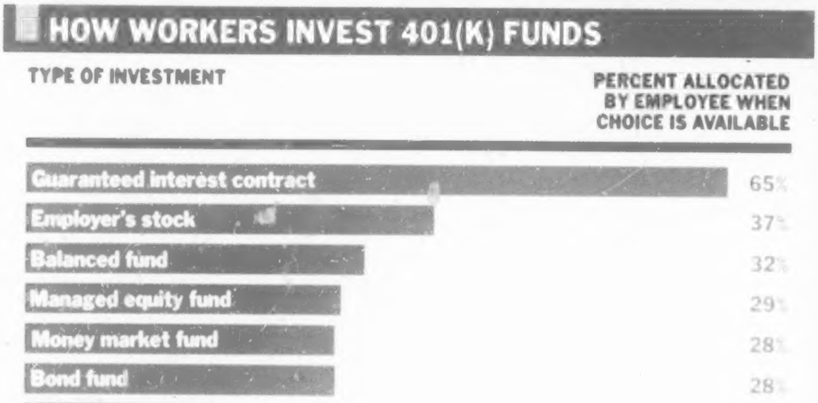
The most popular are defined-contribution plans, where you put money in tax-free and it compounds tax-free until you withdraw it. These include Keogh plans for the self-employed and employees of unincorporated businesses, and 401(k) plans for employees of for-profit corporations. In 401(k) plans, both you and your employer may make contributions. Your own annual contribution may not exceed an amount indexed to the cost of living; in 1989 that ceiling was $7,627.

Your job is to integrate your 401(k) assets with your overall long-term investment strategy. As a tax-sheltered account, your 401(k) is an ideal nest for investments that throw off a lot of taxable income—bond funds, high-dividend stock funds, and stock funds that make frequent capital gains distributions.

The choices you're offered for investing your 401(k) money are limited, but one of them is usually a diversified stock portfolio, often managed by a mutual fund company. Unless you are already heavily invested in stocks outside of your 401(k), this is probably your best bet.

In many company plans, investors put too many of their eggs in a single basket—their company's stock. If your company is contributing stock to your 401(k), for instance, don't steer a big percentage of your own contributions into its stock as well. After all, your job is your most valuable asset. If your company goes out of business, a heavy commitment to its shares will compound the blow to your finances. The problem is especially acute when a big percentage of the plan's assets are tied up in an employee stock ownership plan. ESOPs give long-term employees a chance to sell some of their company shares when they near retirement. If you're offered that opportunity, seize it.

The most popular choice among 401(k) participants is a guaranteed interest contract, or GIC. Unfortunately, it's also among the least desirable for long-term investors. These contracts, offered by life insurance companies, guarantee a stated rate of interest for the life of the contract, typically one to five years. In the hotly competitive market for retirement fund money, GICs have been yielding up to 8.5% on one-year contracts and 9% on five-year deals. But as with bank CDs, which they resemble, yields drop when interest rates decline.



SOURCE: MASSACHUSETTS MUTUAL LIFE INSURANCE CO

Despite lackluster returns, guaranteed interest contracts are the most popular place for employees to put 401(k) money. They far outdraw more rewarding equity funds.

The GICs' resemblance to CDs also extends to preserving your principal. The value of your investment does not change to reflect shifts in interest rates. Unlike CDs, however, GICs are not backed by any form of federal insurance. They are only as sound as the company issuing them. The biggest problem with GICs is that over the long run their performance roughly tracks that of five-year Treasury bonds. If that sounds appealing, consider that since 1926 those intermediate Treasuries have provided an annual average return of only 4.8%.

When you leave the company, you have a window of opportunity for reallocating your 401(k) money. If you don't like the investment options the company plan offers, transfer your funds into an IRA. With an IRA, your investment horizon expands to include the whole world of securities and mutual funds. A self-directed IRA in a Charles Schwab account or in Unified Management's Unisave account, for example, gives you a crack not only at discount brokerage services but also at investing in a wide range of load and no-load funds.

When you finally retire, 401(k)s give you one tax advantage that IRAs don't. With a 401(k) you can take out all your money at once and cut your tax a bit by using the five-year forward-averaging method. That's great if you expect to use the money not for income but to buy a boat or a cottage by the sea. ■

complex. Warns Jere McGaffey: "You must make sure you have absolutely no equity or interest left in the business at the time of your death or else the entire value of the company may revert to your taxable estate." Thus, you must be able to predict with some accuracy when you are going to die.

Although 2036(c) is couched in such fuzzy and all-encompassing language that tax lawyers have yet to work out its full implications, a few brave souls are attempting to get around it. One of them is Jack Babbitt, the founder and owner of Devco, a chemicals company based in Tulsa with a complicated constellation of interests in petrochemical companies situated in California, Canada, Saudi Arabia, and Chile. Babbitt, who was married for 39 years, widowed, and remarried, has three children in Tucson, Arizona; Los Angeles; and Midland, Texas. His goal is to pass equal ownership of Calsulco, an 80%-owned subsidiary of Devco, to his son, who is now running it, his two daughters, and their respective spouses.

Babbitt sought the advice of Charles Rains, an attorney at Sutin Thayer & Browne in Albuquerque, New Mexico, who specializes in brain twisters like this one. Rains has stitched a crazy quilt of trusts, gifts, and guesswork. First, the Helen Babbitt family trust, created by Babbitt's first wife with Babbitt and his kids as beneficiaries, bought 40% of Calsulco's closely held stock. Next, a 40% chunk of the company's tangible assets went into a GRIT, with the new maximum allowable term of ten years. Third, Babbitt and his wife are giving a total of $120,000 worth of Calsulco's common stock to the three children and their spouses each year for the next five years—the maximum the couple can give without incurring gift taxes. "By using a GRIT we've in essence tied Jack to the ten-year term," notes Rains. "If he dies before the trust expires, everything goes back into his taxable estate." Or as Babbitt puts it, "Dying in the next ten years would be real bad tax planning."

DAVID STRICK—ONYX

Ron and Carol Moceri's "remarriage insurance" cuts out the survivor's spouse.

No matter how many trusts you have, and however ingenious their construction, you still need a will. Assets you use all the time—checking accounts, cars, jewelry, and other day-to-day pleasures and necessities—aren't trustworthy, so to speak, but they are still worth passing on. A will attests to your intention that someone after you should enjoy, enjoy. Ernest Milani, 60, took this notion to heart. He is the Northeast president of CDI Corp., an engineering and technical services company headquartered in Philadelphia, and his will is 80-odd pages long.

In it Milani has spelled out the disposition of the family antiques and jewelry to help prevent squabbles among his three grown daughters and one son. And then there is the wine. His cellar has more than 3,000 bottles, willed to various oenophile friends. "I'm trying to drink it all before I go," he jokes, "but I may not make it."

Milani's estate plan has another unusual feature: a memorial trust from which the income will buy a round of drinks for the house at his favorite tavern every year on his birthday. "It started as a lark," he says, "but then it turned serious." His will covers a number of contingencies, such as what happens if the bar goes out of business (the free toasts will be raised in another location), and even provides for the bartender's tips. This liquid memorial should last about a century after Milani's death. Says Alexander Bove, the Boston attorney who helped him draw up his will: "By that time people will probably have forgotten who Ernie was, but they'll no doubt gladly toast him anyway." Even if you can't take it with you, you can arrange to leave 'em laughing when you go. ■

THE STATES AND YOUR ESTATE PLAN

The rules that govern death duties in the 50 states were not created equal. If you move often or have assets in more than one state, you should know that not all states define property ownership the same way. Nine of them—Arizona, California, Idaho, Louisiana, Nevada, New Mexico, Texas, Washington, and Wisconsin—have community property laws, which assume that you and your spouse both own all assets acquired during your marriage. But in common-law states, the person whose name is on the deed—or the bankbook, or the car title—is usually presumed to be the sole owner.

Say you live in Washington, a community property state, and own a vacation home there in your name only. Move to Oregon, a common-law state, and your spouse could lose any claim to the Washington house upon your death. One solution: Establish a joint tenancy with right of survivorship, which guarantees your spouse's share no matter where your estate is probated.

There's more. Suppose you summer in Greenwich and winter in Boca Raton, you lucky devil. As the table shows, Florida is far cheaper to die in than Connecticut, but for your heirs to profit from that fact you must legally reside there. First, a pleasurable duty: Spend as much time in Florida as possible. Then register to vote, register your cars, and keep your bank accounts there. Make sure your Florida address appears on your passport and other papers. To allay all doubt, attach to your will a sworn affidavit of your intent as to domicile.

Variations in state law can affect crucial details of your estate plan. On moving from Massachusetts to New York, BT Securities vice president Ira Weinman discovered that he could not serve as sole trustee of his revocable trust. Had he not named a cotrustee (he chose his brother-in-law), a New York judge could someday have declared his well-laid trust null and void. Most often, a move from one state to another doesn't require an earthshaking change in your estate plan. But check to be sure.

WHAT'S LEFT OF A MILLION DOLLARS, STATE BY STATE

The chart shows how big a bite taxes take from a $1 million estate left by a widow or widower entirely to a son or daughter. The feds tax anything over $600,000 at rates ranging from 37% up to 55%. In 31 states, the heir ends up with $847,000 after state and federal death duties. All 50 states impose what's called a pickup tax, which reduces the amount that goes to the U.S. Treasury because it is credited against the federal estate tax due. In addition, several states make heirs who are residents pay an inheritance tax on their legacies. The states with the stiffest levies: Massachusetts, sure, but *Idaho*?

STATE	FEDERAL TAX	STATE TAX	AMOUNT LEFT FROM $1 MILLION
MOST STATES*	$119,800	$33,200	$847,000
VIRGINIA	$119,800	$34,196	$846,004
NORTH CAROLINA	$119,800	$35,000	$845,200
KANSAS	$119,800	$41,750	$838,450
OKLAHOMA	$119,800	$45,725	$834,475
RHODE ISLAND	$119,800	$50,040	$830,160
INDIANA	$119,800	$51,900	$828,300
NEW YORK	$119,800	$53,500	$826,700
DELAWARE	$119,800	$53,750	$826,450
CONNECTICUT	$119,800	$54,500	$825,700
OHIO	$119,800	$58,100	$822,100
PENNSYLVANIA	$119,800	$59,880	$820,320
WISCONSIN	$119,800	$61,125	$819,075
SOUTH CAROLINA	$119,800	$67,400	$812,800
SOUTH DAKOTA	$119,800	$69,000	$811,200
MICHIGAN	$119,800	$71,099	$809,101
IOWA	$119,800	$71,825	$808,375
KENTUCKY	$119,800	$84,950	$795,250
MASSACHUSETTS	$119,800	$105,500	$774,700
IDAHO	$119,800	$113,000	$767,200

***Alabama, Alaska, Arizona, Arkansas, California, Colorado, Florida, Georgia, Hawaii, Illinois, Louisiana, Maine, Maryland, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Oregon, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, and Wyoming.**

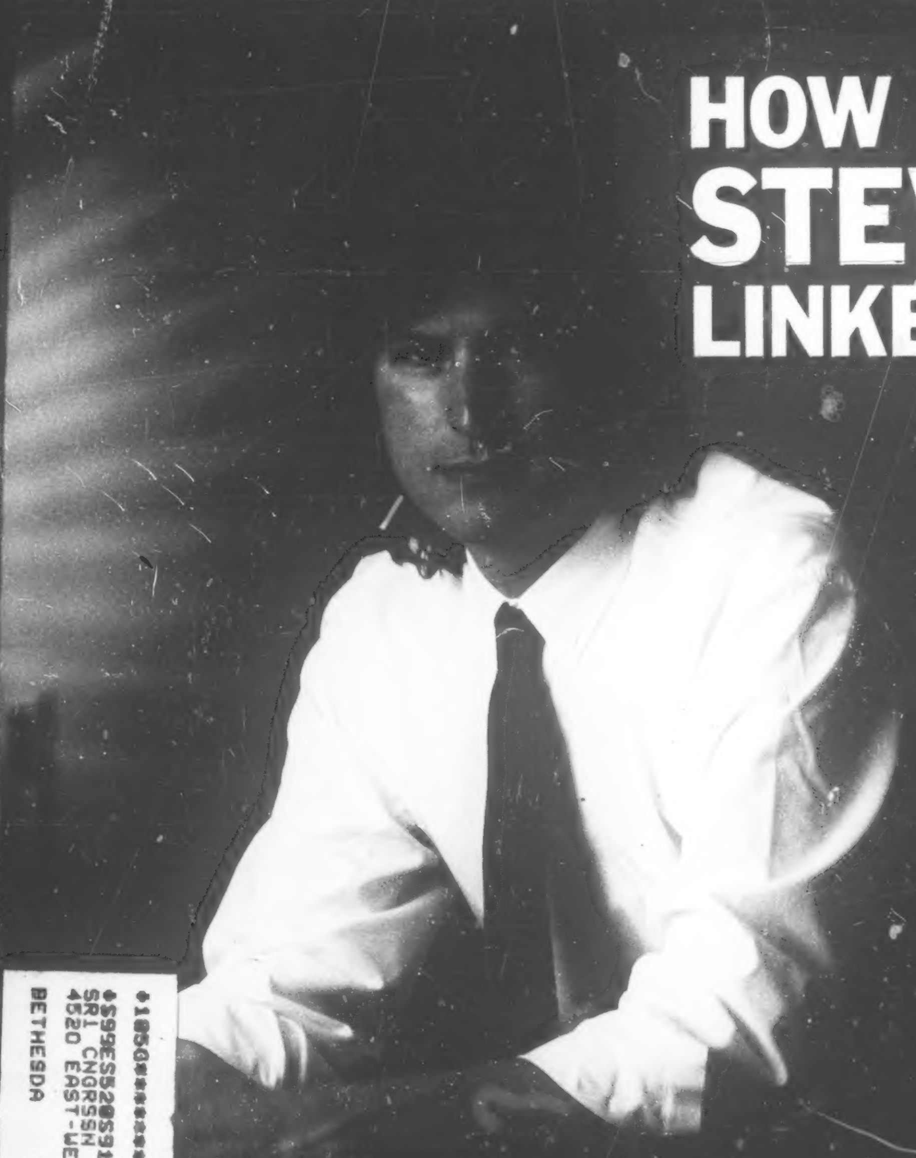
SOURCES: ARTHUR ANDERSEN & CO.; ADVISORY COMMISSION ON INTERGOVERNMENTAL RELATIONS

C8900-1

BELLSOUTH'S CELLULAR DEAL • MANAGING THE FBI • BIG OIL'S BIND

OCTOBER 9, 1989 $3.50

FORTUNE



HOW STEVE JOBS LINKED UP WITH IBM

His new alliance outfoxed old pal Bill Gates—and is rocking the PC world

*105G**********5-DIGIT 20814
*S99ES520@S91*5 YS20814 JUN91
SR1 CNGRSSN INFO SVC MDOORE**
4520 EAST-WEST HWY. *D019241
PL00188
BETHESDA MD 20814-3319

OCTOBER 9, 1989

FORTUNE

"A funny thing has happened since we started working with IBM. We like them and they like us." PAGE 48

COVER AND ABOVE: Steve Jobs was photographed by Doug Menuez in one of Next Inc.'s new buildings in Redwood City, California.

ENTREPRENEURS/Cover Story

HOW STEVE JOBS LINKED UP WITH IBM 48

The alliance that is rocking the computer industry started at publisher Kay Graham's 70th-birthday gala two years ago. Jobs met IBM CEO John Akers there and told him that IBM's strategy based on Microsoft software was all wrong. Akers countered with a question: "How would you like to help us?" *by Brenton R. Schlender*

MEANWHILE, BACK AT MICROSOFT . . . 61

. . . Bill Gates churns out software for Big Blue—and caustic comments about his old pal Jobs and the IBM-Next combine.

CORPORATE PERFORMANCE

BELLSOUTH IS ON A RINGING STREAK 66

The Baby Bells are in a red-hot business. Everybody is talking, faxing, beeping, and voice-messaging. Now the biggest of the regionals aims to be tops in cellular phones. *by Stuart Gannes*

PACIFIC TELESIS: "NOON ON A SUNNY DAY" 76

Once fogged in by regulators, the California Baby has broken into the clear. *by Nancy J. Perry*

COMPANIES TO WATCH 79

K mart has stalled partly because Chief Executive Joseph Antonini has no one around him to give the bad news. *by Faye Rice*

Also: Cooper Tire & Rubber, Autodesk, Tuscarora Plastics, and Greiner Engineering.

COMPETITION

LOOK WHO NEEDS OUTPLACEMENT 85

It's shakeout time in the business that helps victims of corporate downsizing. That means cutting rates—and people. *by Jeremy Main*

LOOKING AHEAD

BIG OIL FACES A BIG SQUEEZE 94

Americans want a growing economy *and* a cleaner environment. Energy producers are caught in the middle. Increasingly tougher foreign competitors will try to cash in. *by Peter Nulty*

WHAT WORRIES ARCO'S CHIEF 102

The country has lost its sense of urgency about energy, says Lodwrick Cook, but not its appetite.

VOL. 120, NO. 8

"In terms of PR, yes, Steve is the best. But he does it by saying how crummy everyone else is."

PAGE 48

"He can rip you up in an awful nice way."

PAGE 66

"We've lost money on solar [energy] for ten years. I think it's time to let somebody else do that."

PAGE 102

"Now Larry [Tisch] is not that tough to figure out. I know that when I say 635, he'll say 650."

PAGE 109

"Michelangelo painted the Bible for people who couldn't read."

PAGE 143

"I cry every time I sit down to play."

PAGE 189

DEALS

LIVING OUT EVERY MANAGER'S DREAM 109

Former CBS executive Peter Diamandis made $100 million in eight months. All it takes, he says, is luck, nerve—and an LBO.

REAL ESTATE

NICE PROFITS FROM BETTER CITY LIFE 117

Developers would pave paradise for parking lots to make a buck, right? Not Maguire Thomas Partners, the little-known Los Angeles firm that is now No. 1 in the U.S. *by John F. Lawrence*

FARMING

HOW I MADE $812 IN THE OAT BRAN CRAZE 125

A cautionary tale wherein our Illinois-born writer learns a thing or two about agricultural supply and demand. *by Penny Ward Moser*

MANAGING

THE FBI IS A TOUGH OUTFIT TO RUN 133

Think of the bureau as a service company with 260 lines of business—the laws Congress asks it to enforce. *by Lee Smith*

JAPAN

JAPANESE COMICS ARE ALL BUSINESS 143

Cartoons have long been a national craze. Now publishers are using them to explain esoteric subjects, like economics. In *Japan Inc.* you'll meet an unnamed American President who tires when discussions get complicated. *by Sally Solo*

DEPARTMENTS

EDITOR'S DESK 4

INDEX 6

NEWS/TRENDS 8

The UAL buyout seems done, with the pilots included; can United Airlines lift off with all that debt? West Germany's new refugee crisis, opportunities in South Korea's stock market, and more.

FORTUNE FORECAST 17

Food prices will moderate, but higher labor costs will push up inflation. *by Vivian Brownstein*

PERSONAL INVESTING 33

Some analysts see yellow flags ahead for the Big Three U.S. automakers. But this could be a good time to get into the race. *by Patricia Sellers*

Also: How to play the foreign-currency markets without worrying, best buys in antipollution stocks, and Portfolio Talk with Merrill Lynch chief investment strategist Charles Clough.

FORTUNE PEOPLE 189

James Burke becomes the newest general in the drug war, concert pianist Phoebe Zaslove loves to play the market, Peter Ueberroth and partner J. Thomas Talbot take over money-losing Hawaiian Airlines, and more. *by Mark Alpert*

ON THE RISE 190

BOOKS & IDEAS 193

An unusual look at leadership—with some intriguing role models. *by William Lilley III*

LETTERS TO FORTUNE 199

KEEPING UP *by Daniel Seligman* 203

EDITOR-IN-CHIEF Jason McManus
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin
TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITORS Richard Armstrong, Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, John J. Curran, Marta F. Dorion, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr. (European editor), Louis Kraar, Kenneth Labich, Colin Leinster, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Bill Saporito, Stratford P. Sherman, Lee Smith (Washington)
SENIOR EDITOR John F. Lawrence
ASSOCIATE EDITORS Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Alan Farnham, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, CA), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Robert E. Norton (Washington), Peter Nulty, Brian O'Reilly, Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Lenore Schiff, Brenton R. Schlender (San Francisco), Patricia Sellers, Andrew Evan Serwer, Thomas A. Stewart, Alex Taylor III, Shawn Tully (Paris), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITOR Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Mark M. Colodny, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Laurie Kretchmar, Susan E. Kuhn, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo), Richard S. Teitelbaum
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Si[illegible]ore (technology chief), David Sloan (deputy), Charles J. Attardi, Leslie Brenner, Jonathan Brown, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Simone M. Kilian, Scott Kelliher, Daniel Lawrence, Michelle Lockhart, Frances Owles, David V. Rile, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CONSUMER MARKETING DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

ED KASH

Schlender (with shoes) interviews Jobs at the Next picnic.

OUR COVER STORY, "How Steve Jobs Linked Up With IBM," is Keith Johnson's favorite kind of business tale. Says Johnson, who edited the piece: "Here you have very strong-willed, able people playing a high-stakes game of chess." The opponents: Jobs, founder of both Apple Computer and Next Inc., and Bill Gates, software king, Microsoft CEO, and billionaire. The prize: the support of IBM. Tracking the moves, analyzing the tactics, and explaining the importance of the outcome is associate editor Brent Schlender.

FORTUNE's man in San Francisco, Schlender spent three weeks at Next's factory and headquarters in Northern California interviewing Jobs and sitting in on marketing and strategy sessions. Says Schlender: "Jobs is more of a manager than I expected. He does use his veto power. But he is not condescending and his staff is not awed."

Maybe that's because Jobs knows how to throw a great party (above). Says Schlender: "Apple was a company of people in their 20s, with a lot of energy and very little need for sleep. Next is a company of 30-year-olds, who have kids and interests outside of work. Instead of having rock bands at its recent picnic, there were clowns."

To Schlender, Gates is an unusual interview: "Most people just answer the questions. Gates answers, then turns around and tells you why he thinks the question may be a little off line. It's helpful and not at all unpleasant. But like everything else at Microsoft, it's a little intense." Marveling at how Jobs ended up with Big Blue after all the nasty anti-IBM ads he ran at Apple, Schlender concludes, "Corporate strategy is as much a matter of politics as technology."

Another technology expert, associate editor Stuart Gannes, has just completed a year at Stanford University, where he was a John S. Knight journalism fellow. He chose to write about BellSouth, the biggest of the Baby Bells, partly because of its success in the fast-growing cellular phone business. Gannes finished his piece at 1 A.M. on Monday. At 8 A.M. a company press officer called him at home: BellSouth had just agreed on a $10 billion deal with Lin Broadcasting to merge all their cellular operations. Says Gannes: "She said Chairman John Clendenin wanted me to be the first to know."

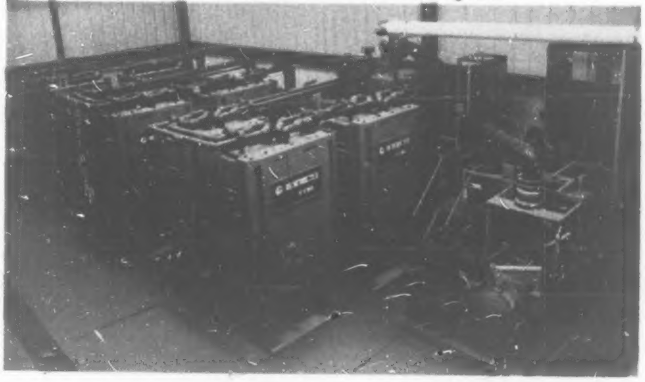
We want our readers to be the first to know the inside story on BellSouth, as well as what's going on at Next, Microsoft, and IBM.

Ann M. Morrison
ASSISTANT MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President, Joseph A. Ripp, Treasurer, Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97; Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, Fla. 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-621-8000. © 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company. **For subscription queries, call Customer Service at 1-800-621-8000.**

COMPANY	REVENUES latest four quarters in millions	NET INCOME in millions	STOCK PRICE RANGE past 12 months	RECENT PRICE P/E multiple*
Browning-Ferris	$2,403	$254	$25.00–$39.375	$37.63 22
Laidlaw Transportation (Class B shares)	$1,349	$177	$12.625–$17.125	$16.75 19
Groundwater Technology	$102	$10	$20.50–$29.50	$24.75 20
Ionics	$91	$3	$14.625–$24.375	$22.75 30
Trion	$53	$3	$5.125–$10.00	$8.13 16
Canonie Environmental	$44	$4	$16.75–$27.75	$16.75 22

*Based on earnings in the latest four quarters, exclusive of nonrecurring items.



NOT DOWN IN THE DUMPS
Analysts are intrigued by these companies that clean up the environment and dispose of waste. Ionics makes purifiers (left) that supply Buckeye, Arizona, with 900,000 gallons of water a day.

3% for the year, barely enough to make up for a 1.25% sales load and a 0.6% annual fee.

Shearson Lehman's no-load **SLH Global Currency** fund, which has been around since last November, has done far better. Structured as a limited partnership, it is able to trade more aggressively in the short term because limited partnerships do not operate under the same trading restrictions as traditional mutual funds. The approach appears to be paying off: So far in 1989, the fund is up 12%. Shearson, which also offers four single-currency funds, requires a minimum investment of $2,500. – **Ellen Schultz**

ROSES AMONG THE ENVIRONMENTAL ASHES

■ You can't get away from the environment. It's everywhere, and so is talk about buying into companies that handle solid waste, dirty water, and polluted air. For that very reason, good buys are hard to find. Since President Bush announced his new clean air bill, for example, stocks of companies that build scrubbers or supply the lime used in them have become as hot as the exhaust gases they cleanse.

For conservative, conservationist buyers, mutual funds that specialize in environmental stocks may be the best path to the greensward. Boston's Fidelity Investments started up its **Select Environmental Services Portfolio** last June, and Freedom Capital in the same city recently launched its **Freedom Environmental Fund**. But more intrepid souls may choose to undertake their own quest for the occasional rose among the ash heaps.

The resurgence of public interest in the environment has helped make stock market stars out of solid-waste disposers **Waste Management** of Oak Brook, Illinois, and Houston's **Browning-Ferris**. Both are trading at over 20 times earnings, well above the market multiple of 14, though most market watchers feel the stocks are fairly priced as industry leaders in a recession-proof business. There will be garbage to dump, no matter what.

Lawrence Greenberg, who runs Fidelity's environmental fund, still thinks these stocks are good buys but sees more upside in Browning-Ferris. He also likes the cheaper **Laidlaw Transportation**, based in Burlington, Ontario, whose stock trades over the counter. Well-known as the operator of a 20,000-strong fleet of school buses, Laidlaw is also the third-largest handler of solid and hazardous waste in North America. **Chemical Waste Management**, 81.1% owned by Waste Management, is the big, expensive, pure play in toxic waste cleanup but has a nosebleed P/E of 30. Beth Heming of Chicago Corp. thinks little **Canonie Environmental Services**, an over-the-counter outfit in Porter, Indiana, that treats hazardous dumps, could be just as profitable to the investor in the long run.

Companies that deal with tainted water and air are tougher calls. Drexel Burnham's Leone Young notes that "most of these little companies weren't publicly traded during the last recession." Because they are generally growth stocks, P/E multiples are very high and short-term gains unlikely. Says Richard Eastman of Blunt Ellis & Loewi: "This group is not for conservative investors."

But if you are ready to hold on for two or three years, Eastman thinks **Groundwater Technology**, a small over-the-counter company in Norwood, Massachusetts, that treats what comes out of wells, could pay off handsomely. Despite a P/E of 30, Greenberg favors **Ionics**, a manufacturer of water-purification equipment located—appropriately—in Watertown, Massachusetts. Ionics has begun selling purified drinking water to businesses under the brand name Aqua Cool. Says Greenberg: "It has a very good chance of becoming the first national bottled-water company."

David Beckwith, who runs Freedom Capital's environmental fund, thinks there are still buys in companies supplying lime for scrubbers. But even aggressive Wall Streeters find their stocks untouchably high now. When it comes to dirty air, they say, **Trion**, a Sanford, North Carolina, maker of air filters for all sorts of places from living rooms to Trident submarines, currently offers the best hope of cleaning up from cleaning up. – **Terence P. Paré**

BELLSOUTH IS ON A RINGING STREAK

Not only is this AT&T offspring the biggest and most technologically advanced, its new deal with Lin Broadcasting could make it tops in cellular phones.

■ *by Stuart Gannes*

HOW GOOD is the phone business? Ask BellSouth CEO John L. Clendenin. Better yet, send him a fax, beep him, or call him on his car phone. If he's not there, leave him a voice message. His low-key answer, in a pleasing Texas drawl, will be something like "The phone business is a pretty healthy place to be."

Actually it's red hot. Local and long-distance telephone revenues will top $141.5 billion this year, according to Columbia University's Center for Telecommunications and Information Studies, and the business is now bigger than computers or aerospace. Thanks to a stream of innovative services—electronic data networks, information services, and discount long-distance packages as well as cellular car phones and fax—total telephone usage is growing almost three times as fast as the population. Says Greg Sawers, a security analyst at the New York City investment firm of Sanford C. Bernstein & Co.: "Telecommunications will be the best business of the next decade, period."

Nobody knows this better than Clendenin, 55, a career telephone executive who heads the largest and technologically most advanced local telephone network in the U.S. Nearly six years after BellSouth and six other regional phone companies emerged from the breakup of American Telephone & Telegraph, the Baby Bells are chafing at regulatory constraints they consider out of date in their fast-evolving business. Says Clendenin: "The very idea of what constitutes information is changing. If it can be digitized, it can be transmitted. That includes photographs, movies, symphonies, books, financial or engineering data, and of course voices. We can make the telephone line your entry gate to the information age."

REPORTER ASSOCIATES *Karen Nickel, Darienne L. Dennis, and Gabrielle Solomon*

CEO Clendenin: "Have you Ramboed yet?"

BellSouth is already a powerhouse in the booming—and loosely regulated—cellular telephone industry. Last spring's $710 million acquisition of the remaining shares of Mobile Communications Corp. of America made BellSouth the third-largest cellular company in the U.S., with some 345,000 subscribers in such cities as Los Angeles, Atlanta, Houston, and Miami. Now Clendenin has reached an agreement to spin off and merge BellSouth's cellular operations with those of Lin Broadcasting of New York City, the No. 7 carrier with 295,000 subscribers in such choice markets as New York, Dallas, and Philadelphia. If the deal goes through, the combined company, half owned by BellSouth, with an option to buy 100% later, will pass McCaw Cellular Communications as the largest in the business. Sawers estimates that cellular and paging services could contribute about $500 million to BellSouth's profits by 1993.

Meanwhile, BellSouth and its siblings are dancing in a shower of cash from their regional telephone monopolies. Six years ago AT&T appeared to be hanging on to the glamour businesses, such as long distance and computers, while casting off the dregs. The regional companies, to use an industry acronym, inherited POTS, or plain old telephone service.

But as a group the Baby Bells earned $8.9 billion in 1988, up 6.5% over the previous year. Since January the septuplets' stocks have shot up 35% on average, more than the market's 24% and faster than earnings growth alone (see chart) would seem to justify. Many investors are attracted by the surging cellular telephone business, whose value may be inadequately reflected in the regionals' stock prices. But of equal importance to Wall Street analysts is the move by many states—eight at last count—toward incentive-based regulation of the core phone service.

The traditional regulatory approach sets the rate of return the telephone company may earn, usually expressed as a percentage of capital or shareholders' equity, but provides no real spur to boost efficiency. By letting the companies keep a portion of any profits above their allowed rate of return, telephone folks say, the new approach could prompt a wave of streamlining and put earnings on a steeper growth curve. Salomon Brothers analyst Lap Lee considers the new regulatory trend a major reason to buy Baby Bell stocks. "This is like the New York real estate market in the 1970s," he says. "The value was there but nobody saw it."

PHOTOGRAPHS BY ROB KINMON

In Coral Gables, Florida, a Southern Bell worker buries fiber-optic cable, the new backbone of what Clendenin calls the information age.

In today's telephone industry, BellSouth stands out like a lit-up switchboard:

■ With 1988 revenues of $13.6 billion, it is the biggest of the regionals. It makes the most profits ($1.7 billion last year) and sits on the most assets ($28.5 billion).

■ Shunning ill-considered diversification efforts like computer retailing and real estate development projects, which many of its siblings have since unloaded, BellSouth stuck to its knitting. Its biggest investments outside its basic service, cellular systems and Yellow Pages, are phone related. Clendenin's 1986 purchase of Yellow Pages marketer L.M. Berry makes BellSouth a world leader in the highly profitable directory publishing business. By 1991, promises Clendenin, 25% of BellSouth's revenues will come from such unregulated activities.

■ BellSouth was one of the first Baby Bells to move abroad, where it is a big winner in the race for cellular business. In Argentina a BellSouth-led consortium recently beat out two other regionals for a $220 million contract to build a mobile phone system. And it is a partner in cellular and paging operations in France, Britain, and Australia.

■ The company's basic network is the most technologically advanced in the U.S. Some 95.3% of its switching offices now operate with efficient electronic controls, and more than 97.8% of its major trunk lines use high-capacity fiber-optic cable—tops among the Baby Bells. BellSouth is the first U.S. telephone company to bring optical fiber right to customers' homes.

■ Even BellSouth's labor relations are enviable. Last summer it was the first regional to sign a contract with the Communications Workers of America. Negotiations at the other six Bells bogged down when management tried to shift more of its rising health care costs to workers, and three companies took long strikes. BellSouth, with more success than its sisters in restraining health costs, didn't have to confront the unions.

■ For these and other reasons, BellSouth is the most admired utility. In FORTUNE's 1989 survey of corporate reputations, it was ranked above its telephone peers by a group of senior executives, outside directors, and financial analysts. Says Robert B. Morris III, a security analyst at Goldman Sachs: “BellSouth does almost everything right. It's been a consistent story. They never stumble.”

From birth, to be sure, BellSouth had some key advantages. Booming Southeastern states like Florida, Georgia, and North Carolina are where any company dreams of operating. The company also controls the phone systems in Alabama, Kentucky, Louisiana, Mississippi, South Carolina, and Tennessee. With its total number of telephone lines increasing by more than 600,000 per year, BellSouth can install efficient new switches and fiber-optic lines without having to tear out existing equipment before it is fully depreciated. Few other regionals, save Pacific Telesis (see box), have that luxury.

“We were blessed, I can't deny that,” says Clendenin. “But the blessing only gets you up to bat. Whether you get a hit or not is up to you.” The intense and restless CEO, who sometimes arrives at BellSouth's green-glass midtown Atlanta headquarters by 4 A.M. but doesn't take time for breakfast, wants the company to grow at a rate that exceeds even the heady population trends of the Southeast. That means more innovation and continued high capital investments. “It would be easy to make a quarter or a year look great financially,” Clendenin explains. “All we have to do is stop spending. But you don't grow a business by circling the wagons.”

Clendenin's associates perceive a mix of Southern gentility and toughness in their boss. Says one: “He can rip you up in an awful nice way.”

The son of a mining company geologist, Clendenin grew up in El Paso, Texas. After starting at Swarthmore College in the same class as Massachusetts Governor Michael Dukakis, he transferred to Northwestern University to take journalism courses. Says Clendenin: “All my brothers and sisters were science majors. At the dinner table they'd be talking about physics and geology, while I was thinking about social justice.” He married after his junior year and worked nights for a manufacturer of dry-cleaning equipment. His wife, Ann, was a secretary for an insurance company. While waiting for a spot in Air Force flight school, he joined Illinois Bell as a trainee.

In 1955, when the cold war was pretty warm, Clendenin was ordered to the Strategic Air Command. Stationed in Guam as the pilot of a B-47 equipped to carry nuclear bombs, he had to practice low-altitude bombing runs. “The idea,” he recalls with a trace of nostalgia, “was to come in under 1,000 feet, below the enemy's radar, then pull up and turn back just as you released the bomb.” If the bombs had been live, Clendenin says, “we knew we would never get away fast enough, but we would give it the old college try.”

William McCoy heads the cellular and Yellow Pages operations.

Back home in 1959, he rejoined the telephone company and moved quickly through the ranks—to Pacific Northwest Bell in Seattle, an AT&T staff position in New Jersey, and finally to Atlanta in 1981 as president of Southern Bell. The following year, he began working on the post-divestiture business plan for BellSouth. He was CEO from day one.

Everyone who worked for Ma Bell vividly recalls January 1, 1984, the day of the Big Bang. Richard J. Sharp, now vice president of human resources at BellSouth, picked up his home phone to check if there was still a dial tone. Clendenin says he had mixed emotions. “We had a culture that we knew had to change, yet it was also our heritage. There were good and logical reasons behind the old Bell system. But they produced a narrowness in operations that frustrated people.”

Clendenin devotes hours to his BellSouth homework. He reads more than 30 magazines a week, from *Time* and *Harvard Business Review* to industry journals like *Telephony*, and talks to “technology gurus and other people I can drain for information.” He has frequent “soak times,” briefings with Duane Ackerman and William McCoy, BellSouth's two vice chairmen. “Then I send out a lot of sloppily written questions about what's going on here.” Clendenin's associates perceive a mix of Southern gentility and mental toughness in their boss. Says vice president Sharp: “He can rip you up in an awful nice way.”

FOLLOWING a “loose-tight” management approach, Clendenin delegates authority to his officers. They have considerable latitude, he says, in meeting a set of specific quarterly objectives and yearly commitments after they have been approved at the top. Still, corporate strategy emanates from a policy council that Clendenin heads. Since he also emphasizes the importance of the team approach, arguments are rare.

To stir BellSouth's managers to take more initiative, Clendenin hired two consulting firms to conduct a series of wilderness retreats. Nicknamed Rambo school by company executives, they are held in the Georgia backwoods or the Florida Keys. During the day managers learn lessons in communications and cooperation. Examples: snagging a flotilla of loose barrels floating down the river or agreeing upon a set of directives on how to build a raft. Judy North, a marketing vice president at South-

In L.A., America's most cellularized city, BellSouth battles for customers with PacTel.

PHILIP SALTONSTALL—ONYX

ern Bell, was part of a team that had to follow another group's instructions. "We built the raft, but it wouldn't float. Then we were underwater. We got wet and dirty an awful lot," she says. At night the executive campers watch the movie *The Bridge on the River Kwai,* then go to sleep in tents. Back in Atlanta, they ask each other, "Have you Ramboed yet?"

The Rambo school highlights the difference between the old paternalism of AT&T and Clendenin's hand-over-the-ball approach. Many telephone veterans are thriving in the new atmosphere. Before divestiture, recalls Harvey R. Holding, BellSouth's chief financial officer, "AT&T had done all our tax planning, it held our equity, it helped us with our debenture issues. All of a sudden we had to do these things ourselves."

Like all the regionals, BellSouth is running and selling basic phone service far better than it ever did under AT&T. Marketing vice president Don L. Strohmeyer revved up his operation from scratch. "Prior to divestiture, the Bell System was not in the marketing game," he says. "We had about a dozen products, like custom-calling and Touch-Tone features. But there was no pricing flexibility. We couldn't promote a new feature by waiving the installation charge."

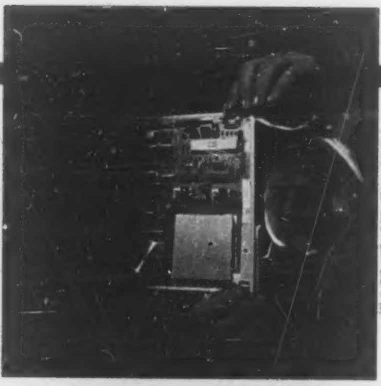
Strohmeyer hired market researchers to develop profiles of large BellSouth customers, including banks, health care institutions, government agencies, and military bases. Then special teams were set up for the top 200 customers—including Coca-Cola, Federal Express, and Delta Air Lines—which account for about 30% of all revenues from major business customers. The payoff: BellSouth is hanging on to most of these big phone users, who unlike homeowners are no longer captives of the local monopoly. With roof transmitters and other devices, they can bypass it and beam calls directly to AT&T, MCI, and other long-distance carriers.

THE RESIDENTIAL market, under Strohmeyer's scrutiny, was divided into groups with similar incomes and phone-use patterns. One segment, for example, is called Briefcase High-Techers. "People in this category indicate the phone is critical," Strohmeyer explains. "They make business calls at home. They bring work home and are interested in knowing whose calls they have missed. They make few local calls. Almost all of them have personal computers and answering machines, and 20% have second lines." By contrast, Middle-of-the-Road Kidpoolers "are middle income, middle education." They have no interest in missed calls and make minimal use of long distance. Other groups include Single Gadgeters With Teens, unmarried low-income folks with high-tech phones and cable television, and Grey Home Entertainment, retirees with VCRs, cable TV, and phones especially designed for those with hearing and other problems.

The Baby Bells have whacked away at costs by trimming staffs and paring debt. Now they are investing heavily in new technologies. BellSouth will spend some $3 billion this year for new switching and transmission systems to upgrade its phone network. By January 1, promises Richard Snelling, head of network operations for Southern Bell, every switching center in his territory will be electronic. That's good news for business customers, which are demanding more advanced data-handling capabilities. The new centers are more reliable *and* less expensive to operate. Says Snelling: "The faster you get the old stuff out, the more competitive you can be."

Small wonder that switch manufacturers like AT&T, Northern Telecom, and Fujitsu wait in line to persuade BellSouth to try out their latest whiz-bang equipment. Northern, for example, is teaming up with BellSouth and an independent cable television operator to provide an underground fiber-optic cable system for the planned community of Heathrow, Florida, near Orlando. A single optical cable, available to both offices and residences, will provide normal telephone service plus 36 cable television channels, pay-per-view movies, security and energy management information, and access to electronic data. While it does not pay to rip out existing copper cables delivering phone and TV service to homes, BellSouth says the outlook for fiber optics is improving all the time. By next year, it says, it will make economic sense to install optical lines delivering voice signals—but not video—to new housing tracts.

On its existing telephone networks in Atlanta and West Palm Beach, Florida, BellSouth is testing nearly a dozen convenience features in a bid to wring more use from the network and raise efficiency. Customers with PCs and modems, for example, can call up an "information gateway" that lets them tap into databases, check stock quotes, or make airline reservations. Drivers with cellular phones can dial *123 to hear traffic reports for the areas they are passing through, or a personal code to listen to their voice



JACKSON HILL—SOUTHERN LIGHT (2)

New Orleans has optical terminals, but operators still assist on some calls.

mail. An audio information service allows parents with children in one of Atlanta's schools to call the school on Touch-Tone phones, then punch numbers to hear the day's class assignments, the lunch menu, or a message from the school principal. The feature, which BellSouth plans to expand to other schools, has been a hit.

WHETHER BellSouth and the other regionals can reap the full rewards of such innovation is still in doubt. To a great extent, the regionals' future earnings depend on whether they can persuade state utility commissions to change the way the industry is regulated. For decades these commissions have allowed a fairly fixed return, recently in the range of 12% to 15%.

Security analyst Sawers estimates that in 1988 the regional Bells collectively earned some $500 million above their allowed rates of return, which they had to surrender to customers in the form of rate reductions. He says, "In the absence of either a shift away from strict rate base regulation or a sharp increase in capital expenditures, earnings from the regulated telephone business have reached a plateau."

If the Baby Bells had their druthers, they would operate under price ceilings negotiated with the government, as British Telecom does. Industry observers doubt that state commissions will go for this idea any time soon. But BellSouth and most other regionals are beginning to win acceptance for a somewhat less ambitious approach called "incentive regulation plans." Under these schemes the phone company gets to keep a percentage of the profits, usually 50%, above its authorized rate of return.

As a quid pro quo, the commissions demand rate freezes and reductions, called "buy-ins." That happened when three of BellSouth's states, Florida, Kentucky, and Alabama, recently okayed incentive-based regulation. Sawers estimates that buy-ins and subsequent rate cuts in these states will cost BellSouth $690 million in reduced revenues over several years. But beginning in 1990, he figures, operating income growth should start to accelerate unless BellSouth negotiates further buy-ins in other states it serves.

State regulatory reform is not the only hurdle between Clendenin and the golden age of information. The agreement that broke up AT&T bars the regional Bells from making telephone equipment or offering long-distance service outside sharply circumscribed areas. They can transmit other people's computer data but not originate it. Other federal legislation prohibits them from operating cable television franchises in their own territories, though they can and do own them elsewhere. But the Baby Bells also got a few key favors at birth, most importantly the emerging industry of cellular phones.

Nationwide cellular revenues are now about to pass the $3-billion-a-year mark. Revenues and operating income are rising about 50% annually. Advances in technology will soon make it possible for cellular companies to expand capacity at negligible cost. To top off the bonanza, the business is barely regulated. The Federal Communications Commission merely requires that two players operate in each metropolitan area to ensure competition. The local telephone company automatically gets one cellular franchise and the other sometimes winds up in the hands of a phone company based elsewhere.

Each cellular market has taken on the atmosphere of a gold rush town. In Atlanta, where BellSouth competes against PacTel, both rivals send salesmen out on "windshield chases." Explains Earle Mauldin, head of BellSouth's cellular business: "We go at it on the street every day. We look for cellular antennas on cars and try to get customers to switch. We offer people free business cards if they put their cellular phone number on them. That way, we figure, they'll be less likely to change." At present, say Wall Street analysts, cellular franchises are worth anywhere from $150 to $200 per potential customer.

With consolidation the phone companies have grabbed up most of the business. While they are still trying to buy systems, there is little left to be sold. Of the remaining independents, Lin Broadcasting—which owns parts of cellular franchises in New York, Los Angeles, Philadelphia, and Dallas—is the belle of the ball. While some other operators are beginning to report profits, Lin earned $82 million in its latest year on revenues of $226 million. Says analyst Morris of Goldman Sachs: "There is only one Lin."

continued

PLENTY OF BOUNCE IN THESE BABIES

COMPANY	REVENUES latest four quarters in billions	ANNUAL GROWTH RATES			RECENT STOCK PRICE P/E multiple
		four years through 1988		11/21/83-9/1/89	
		REVENUES	PROFITS	TOTAL RETURN TO INVESTORS*	
BellSouth	$13.9	9.3%	7.3%	25.4%	$52.00 14
Nynex	$13.0	7.4%	7.5%	24.7%	$79.00 13
Bell Atlantic	$11.0	7.7%	7.9%	26.9%	$96.00 14
Ameritech	$10.0	4.4%	5.7%	27.1%	$60.13 13
U.S. West	$9.7	6.1%	6.3%	23.8%	$69.00 12
Pacific Telesis	$9.6	4.9%	9.4%	31.2%	$44.88 16
Southwestern Bell	$8.6	4.1%	4.7%	25.7%	$53.63 14

*Source: Sanford C. Bernstein & Co.

Last summer Lin's management rejected an unsolicited $5.85 billion buyout offer from McCaw Cellular Communications of Kirkland, Washington, currently No. 1 in market share. Lin demanded at least $6.22 billion. Security analysts have generally ruled out a higher cash offer from BellSouth or any other regional because it would dilute earnings. BellSouth's bombshell mid-September agreement to create a joint venture with Lin gets around this problem.

The phone company would not part with a penny of cash, says Clendenin. "It uses a currency which is not dollars but the value of our own cellular operations." Sawers agrees: "The company is buying expensive assets but paying for them with its own expensive assets. It's a beautifully structured deal." But Lin is not in the bag. McCaw might come back with a higher counteroffer. Says Clendenin: "We'll cross that bridge when we come to it."

Whatever happens on that front, BellSouth plans to keep the new products coming to serve the information age. Engineers at the company's labs in and around Atlanta are working on sophisticated ways to block nuisance phone calls, for example, and on new Yellow Pages features with fax options. A prototype view-on-demand TV system being tested in five cities allows customers to order by phone, say, a stereo concert video from a tape library. With optical cable, Clendenin says, it would be no trick to transmit such a program in the new high-definition TV under development. People are just starting to realize, he adds, what technology can do to keep the phone lines humming. Five years ago who would have expected such talk from the head of a plain old telephone system?

PACIFIC TELESIS: "NOON ON A SUNNY DAY"

BellSouth may be the biggest and most impressive of the Baby Bells, but Pacific Telesis Group has scored an underdog's triumph. Weighed down by a tough regulatory environment and heavy debt at birth, it boosted profits 43% between 1984 and 1988, to $1.2 billion, on a 21% rise in revenues. PacTel's stockholders have reaped the biggest cumulative total return among the AT&T spinoffs. The stock price has jumped nearly 50% just this year, to around $45. Says security analyst Robert B. Morris III of Goldman Sachs: "At PacTel, it's noon on a sunny day."

PacTel does have a few things going for it, including Chairman Sam Ginn, 52. Whether he is trying to sink a putt, return a volley, or close a customer account, he hates to lose. "Competitive is not the word for Sam," says diamond wholesaler Ronald Goodstein, his tennis doubles partner and good friend. "He is *super*competitive. He is always in the game, every point."

Some 98% of the company's phone customers are in California, whose thriving economy and seemingly unstoppable population growth have led to an insatiable demand for phones and fax machines. California's public utility commission, tilted toward consumers for years, has softened following Governor George Deukmejian's appointment of five pro-business regulators.

Late in September the commission was scheduled to vote on a proposal with far-reaching ramifications: an incentive regulation plan that would allow the state's two large phone companies—GTE and PacTel subsidiary Pacific Bell—to keep all earnings up to a benchmark 12.75% rate of return on capital and to split profits above that point fifty-fifty with consumers. Overnight, PacTel would become the regional Bell company with the largest share of its phone business covered by incentive regulation.

PacTel management has moved aggressively to exploit its California advantage. Former chairman Donald Guinn, who took early retirement at age 55 in 1988, jettisoned more than $1 billion in debt, along with 28,000 employees, and began modernizing the phone network. Guinn put all employees, from mail clerks up, on an incentive pay plan and took PacTel into the uncharted seas of unregulated business.

Throughout the turmoil Ginn, who spent 23 years at AT&T before joining Pacific Telephone in 1978, proved himself a capable first mate. He piloted the company's diversification into paging systems, computer retailing—a business he quickly exited—and cellular phones. The latter turned out to be, in Ginn's words, "another Alexander Graham Bell opportunity."

Boss Ginn at San Francisco headquarters

DOUG MENUEZ

PacTel's cellular operation, which earned $13.5 million on revenues of $111.5 million in the second quarter of 1989, is one of the most profitable in the country. The company boasts 316,000 subscribers and franchises in most major markets, including Los Angeles, Detroit, and Atlanta. Revenues and operating income are growing faster than 50% a year. If sold, PacTel estimates, the business would fetch about $6 billion.

Ginn faces a number of uncertainties, above all competition. Noting that since divestiture AT&T's long-distance market share has plunged from 85% to 67%, contributing to drastic work force cuts, a PacTel engineer paused over his tuna salad sandwich at a recent brown-bag lunch in Pasadena, California, to ask Ginn the question on every employee's mind: What's going to happen to *us*?

The chairman told him that the company will do whatever it takes to keep on streamlining operations. "It's just a matter of time before every segment of our business will be competitive," Ginn said in his typical, tell-it-like-it-is fashion. "We can't stop that. So we've just got to hitch up our pants and go after that marketplace better than anyone else." Exactly what you'd expect from a hard-charging tennis player. **– Nancy J. Perry**

LOOK WHO NEEDS OUTPLACEMENT

It's shakeout time in the booming business that helps victims of corporate downsizing. Turmoil in the industry that guilt built means cutting rates—and people.

■ *by Jeremy Main*

WHEN THE GRIM reaper of corporate restructuring comes calling, as he has for hundreds of thousands of executives in the 1980s, he may bring you a new acquaintance. Chances are that after your boss has given you the bad news he will lead you next door to meet a pleasant, soothing fellow. Say hello to your outplacement counselor, the undertaker of American corporate jobs.

Most people, including some in the outplacement business, aren't entirely sure what these well-meaning morticians are supposed to do. But they rarely fail to generate heated reaction. The pushed-out who feel the counseling helped them find jobs can be ecstatic about the value of outplacement services. Those not so fortunate tend to use expletives. One thing is certain: The corporations that pay for outplacement generally love it; having the counselors around makes firing people easier.

Hunting for new jobs, two out-of-work executives make calls and research potential employers from the New York offices of Right Associates, the No. 2 outplacement firm.

The services' increasing popularity has produced a ten-year spurt of extraordinary growth. Revenues have jumped from $35 million in 1980 to $350 million in 1988, by the estimate of Kennedy Publications of Fitzwilliam, New Hampshire, which compiles data on the subject. Growth probably will continue.

But right now the industry that guilt built looks as if it may need help from, well, an outplacement agency. The business is in turmoil. In the classic manner, all that growth has attracted too many competitors, and now it's shakeout time. Firms are merging and folding, cutting rates sharply, and their leaders are hurling harsh verbal shafts at each other. "On one hand, the industry is growing very rapidly," summarizes a new survey by ConsultAmerica, a Maynard, Massachusetts, consulting company. "On the other, consulting firms are facing higher costs of success and survival. While the industry appears altruistic, outplacement is a very competitive business."

All that competition is spurring firms to improve service. But just what *is* an outplacement company supposed to do? After defusing the ousted executive's anger (and with a little luck, reducing the danger of a lawsuit), the outplacement counselor offers a range of services in ensuing months: psychological treatment for trauma (if necessary), help with writing résumés, videotaped rehearsals for job interviews, and office, secretarial, and research facilities. The outplacement firm will specify carefully that it will not find the client a job; it will teach him how to find one. But as the business matures and clients become more demanding, outplacement firms are going far beyond these basics. Top ex-executives may be provided with personal help for a year or more in discrete and luxurious quarters, with extras such as financial planning, early retirement preparation, counseling for what are called trailing spouses (mates whose lives are affected by the firing), and even health clubs.

That said, outplacement is still an industry trying to find and define itself, mixing opportunism with altruism. Says Louis Masterson, who runs his own firm in Cleveland: "Outplacement has become a haven for people whose qualifications are suspect, people with a marketing focus. There are no barriers to entry." Masterson regrets there is no training or professional certification. "The executive search business has kept its integrity, but outplacement has not."

Robert Chapman, a partner in King Chapman Broussard & Gallagher of Houston, puts the industry's dilemma this way: "Is outplacement going to be a professional

REPORTER ASSOCIATE *Ret Autry*

PHOTOGRAPHS BY JOHN S. ABBOTT

practice providing what's best individually for each client? Or is it going to be a business like temporary employment agencies, putting everyone through the same program?"

Outplacement executives and their clients question whether out-of-work executives need expensive psychological counseling and comfortable offices with secretarial help and phone services. Those nice offices may be no more than executive day-care centers that keep the client from really looking for a job.

Most of the industry regards James Challenger of the fourth-largest firm, Challenger Gray & Christmas of Chicago, as their black sheep, and he regards the others with undisguised disdain. Rivals say his network of 16 offices outside Chicago consists mostly of sales operations that funnel clients into the city for some quick, expensive counseling. He emphasizes his success in getting ousted managers new jobs fast, compared with the "appalling" record of "people who do nothing" for their clients.

FOR ALL the sniping, outplacement has established its place in business. Despite some bad experiences, individual and corporate clients generally appear to appreciate the help. In a survey of 250 displaced executives conducted in 1987 by FORTUNE and E.A. Butler Associates, a New York executive search firm, three-quarters of the executives who had used outplacement help said they found it useful. AT&T keeps no fewer than 19 outplacement firms on retainer, and many other companies have two or three on tap for departing managers. William Henderson, a senior vice president at SmithKline Beecham, which went through a 1,000-worker cutback last year, says the Manchester firm in Philadelphia "helped enormously because people didn't go away mad."

But even lots of enthusiastic corporate clients cannot support all the outplacement firms out there. One result is a rate war. Says the human relations vice president of a FORTUNE 500 company: "There's tremendous flexibility on prices. Firms are offering any number of incentives." Normally outplacement outfits charge 15% of the annual gross pay of an outgoing executive. But today the fee is likely to be 15% of base pay only, and that can be discounted by several points for volume. A second-tier service known as group practice, for blue-collar and clerical workers, is even more competitive. The two- and three-day seminars that previously cost $1,500 a day for a dozen or so employees may now cost $1,200 or less.

"Very intense," says Drake Beam Morin President Jim Cabrera of the competition.

Outplacement companies would like you to believe it's the other fellows who are recklessly cutting fees. Drake Beam Morin (DBM) of New York, the biggest by far of the outplacement firms, "is the leader in price cutting," says Stanley Tilton, president of Right Associates of Philadelphia, the No. 2. "I'm flabbergasted. They can't be profitable. They're going after market share. They won't drive us out of business, but they will the boutiques." James Cabrera, DBM's president, agrees that price competition is "very intense" and that DBM is gaining market share, but denies excessive discounting on his firm's part.

ALL THIS TALK of money is painful to an industry that likes to see itself in an aura of altruism. Striking a typical stance, Tilton says, "If you're in it for the money, you'll go bust. If you're in it for service, you'll have a business." The industry can legitimately claim some goodhearts. Two of the ten biggest firms, Mainstream Access and Manchester, were founded by ex-priests who put their fatherly skills to work for profit in a secular field.

With backgrounds more often in psychology than economics, many outplacement executives are not the world's sharpest businessmen. Yet they have to juggle marketing, expensive help (qualified counselors earn $60,000 to $80,000 a year), prime real estate, and narrow margins. So the squeeze between high costs and discounted fees is starting to hurt. Hay Group Inc. of Philadelphia, one of the leading personnel consulting firms in the U.S., is closing its ten-year-old outplacement operation. Says David Hamrick, the division's head: "It just didn't look attractive compared to other industries we're in."

Mainstream Access, a New York firm founded in 1969 by Richard Pilder, a former priest, and his brother William, a former seminarian, recently filed for Chapter 11 protection to reorganize. Mainstream drew its strength from handling large group dismissals in the steel and auto industries when those businesses were cutting back massively, and later expanded into serving high-level executives individually. But this expansion meant renting expensive real estate in places like New York's Rockefeller Center and Pittsburgh's Mellon Bank Center. Then came the discounting. The Chapter 11

TOPS IN OUTPLACEMENT

	1988 OUTPLACEMENT REVENUE (in millions)	NUMBER OF OFFICES	NUMBER OF CONSULTANTS
Drake Beam Morin New York City	$75.0	77	500
Right Associates Philadelphia	$29.3	63	401
Lee Hecht Harrison[1] New York City	$15.5	12	75
Challenger Gray & Christmas Chicago	$15.0	17	16
King Chapman Broussard & Gallagher[1] Houston	$10.0	11	45
Murray Axmith & Associates Toronto	$9.0	15	55
Jannotta Bray & Associates Chicago	$9.0	6	30
Mainstream Access[2] New York City	$8.3	11	35
Stevenson Kellogg Ernst & Whinney Toronto	$7.7	13	40
Manchester Philadelphia	$7.5	8	36

[1] Including acquisitions since late 1988. [2] Under Chapter 11 protection.

move permits the Pilders to break their leases and focus again on group work from more modest digs. Other companies are likely to disappear. Louis Masterson estimates that in Cleveland alone, half the 25 outplacement companies that have sprung up will have to find other things to do within a year.

MERGERS are also shaking the industry. The fifth-ranking firm, King Chapman Broussard & Gallagher, itself the fruit of a merger of New York and Houston companies last year, recently acquired two more firms. Third-ranking Lee Hecht Harrison of New York has bought four companies in less than a year, increasing its offices from four to 12. Eighteen companies, many of them small shops, have banded together in an alliance called Outplacement International.

Outplacement firms won't need huge corporate cutbacks to keep on growing. Companies will be adjusting their work forces constantly. Says AT&T senior vice president Harold Burlingame: "This is a dynamic process. We'll never be the right size. We may be growing in one market but shrinking in another."

Some employers are creating their own outplacement services. Westinghouse has made it a policy since 1982 to offer outplacement help to every employee "involuntarily made available," as the company puts it. That normally will mean several hundred people a year. More than 90% of them will be handled by the company's in-house service. National firms take care of the remainder, the most senior. When GE announced the closing of its Trumbull Lamp Plant in Warren, Ohio, in May 1988, it hired a full-time counselor to help with the plant's 299 workers. Anne Schuler, an approachable, sympathetic mother of 13, had already done the job during two other GE plant closings and will remain at Trumbull at least until next January.

At its best, outplacement has humanized one of the nastier aspects of business life. Rarely nowadays are employees thrown out on the street without help. Outplacement counselors are often called in well before the cutbacks to plan the assistance the employees will need, and they remain available for a long time for people who have trouble landing on their feet. Of course there will likely be no one to assist the outplacement executives who are losing their jobs just now. But then, they should know how to handle it. ■

When it comes to room service, the Prince never sleeps.

At Prince Hotels, our 24-hour room service awaits you with extraordinary cuisine and courtesy, no matter what hour you arrive. And this is merely one of the great pleasures you will discover in the spirit of the Prince, at more than fifty outstanding hotels throughout Japan and around the world.

PRINCE HOTELS

U.S.A. 800-542-8686/CANADA 800-268-7677/NEW YORK 212-889-5928/LOS ANGELES 213-689-4800/
TORONTO 416-449-7882/VANCOUVER 604-733-3177

FITS IN YOUR HAND YET HAS A LIST OF FEATURES AS LONG AS YOUR ARM.

The Dictamite II is Dictaphone's smallest, lightest microcassette portable, yet has a host of features that make capturing all your ideas as simple as speaking.

Just to name a few: *voice activated recording* starts recording as soon as you start talking. *Digital display* shows you exactly what you've recorded and where. *Internally rechargeable batteries* mean you're always ready to go.

To find out more, call *1-800-433-0880* toll-free or send in the coupon.

Dictaphone. Time Management.™

CFM 1099

Mail to: Dictaphone Corporation,
3191 Broadbridge Ave., Stratford, CT 06497-2559

Name Title
Company Phone
Address
City State Zip

Dictaphone
A Pitney Bowes Company

Dictaphone,® Dictamite,® and Time Management are trademarks of Dictaphone Corporation, Stratford, CT © 1989 Dictaphone Corp.

■ **CAN DETROIT BEAT JAPAN? • FAX FRENZY • KRAFT UNDER PHILIP MORRIS** ■

OCTOBER 23, 1989

$3.50

FORTUNE

THE BEST CITIES FOR BUSINESS

THE TOP TEN

1. Dallas/Fort Worth
2. Atlanta
3. Kansas City
4. Los Angeles
5. Baltimore
6. New York
7. The Bay Area
8. Pittsburgh
9. Portland, Oregon
10. The Twin Cities

Dallas Mayor Annette Strauss slices red tape to make the city a worldclass competitor.

OCTOBER 23, 1989

FORTUNE

Baltimore's historic waterfront has become a big draw for locals as well as tourists.

PAGE 56

ABOVE: Rhoda Baer photographed Fell's Point in Baltimore, No. 5 on FORTUNE's list of the best cities for business.

COVER: Mayor Annette Strauss was photographed against the Dallas skyline by Steven Pumphrey.

THE ECONOMY/Cover Stories

THE BEST CITIES FOR BUSINESS 56

Five requirements make a top location. Heading the list: skilled labor. Two Sunbelt centers have the edge, but other areas are coming back. *by Kenneth Labich*

SOME REAL COMERS AMONG THE MIDSIZE U.S. CITIES 74

Take a new look at Salt Lake City, Memphis, and other growing towns.

FORTUNE'S TOP TEN 79

What distinguishes most of America's best metropolitan areas? A talented work force, strong business leadership, and an ability to accommodate further growth, among other factors. *by David Kirkpatrick*

KEY STATISTICS FOR THE 31 BIGGEST 92

MANAGING

WHY U.S. CARMAKERS ARE LOSING GROUND 96

Despite gains in productivity, quality, and technology, the Big Three are ceding more of their home market to the Japanese. The next 15 months will be a crucial test. *by Alex Taylor III*

THE JAPANESE GO HEAD TO HEAD IN FAMILY SEDANS 104

THE BIG THREE'S TRIO OF NEW LEADERS FOR THE 1990s 112

All the major U.S. carmakers will get different CEOs in the next 26 months. Here's a look at the likeliest successors and their chances.

CORPORATE PERFORMANCE

HOW PHILIP MORRIS DIVERSIFIED RIGHT 120

Disappointment has dogged its efforts to grow beyond tobacco. But by acquiring Kraft—and President Michael Miles—it may have found a new money machine. *by Stratford P. Sherman*

RJR: IT'S FUN TO FIGHT A FETTERED FOE 126

COMPANIES TO WATCH 134

Valmont Industries, Chempower, Frozen Food Express Industries, and Gendex.

POLITICS & POLICY

A TIME BOMB FOR U.S. TAXPAYERS 139

The government guarantees millions of mortgages, bonds, deposits, and student loans. These liabilities, now twice the national debt, are growing fast. So are defaults. *by Robert E. Norton*

VOL. 120, NO. 9

"We're trying to show that this is the age where Nippon Steel is associated with actresses."

PAGE 16

"I want the business community to know we want them here and you don't have to bribe anybody to get things done."

PAGE 56

"The harsh reality is that the Japanese can do an all-new vehicle faster [than we can]."

PAGE 96

"I don't feel bad about selling people products they don't need."

PAGE 120

"Having constant sales is just like taking dope. First you start with 10% off, then it's 15% . . ."

PAGE 167

"I believe in practicing the S.O.B.'s golden rule: *Expect others to do unto you what you would do to them.*"

PAGE 201

COMPETITION

WHO'S FUELING THE FAX FRENZY 151

Small businesses are mad for these miracle machines. The industry's hottest companies—with Sharp and Murata in the lead—spotted the trend while competitors were still chasing megacustomers. *by Frederick H. Katayama*

ENVIRONMENT

WHAT THE 'GREENS' MEAN FOR BUSINESS 159

The stunning rise of environmentalism will affect all industry in Europe—and all Americans doing business there. Costs will rise for some companies, and sales will soar for others. Makers of ecologically friendly consumer products and pollution-control equipment for cars and factories are big winners. *by Shawn Tully*

SELLING

A QUIET SUPERSTAR RISES IN RETAILING 167

Maybe you've never heard of Dillard's. Like Wal-Mart, it is family-run, highly computerized, extremely competitive, great for investors, and based in Arkansas. Founder William Dillard, 75, visits 167 stores a year and says there's really nothing he'd rather do. *by Susan Caminiti*

FORTUNE BOOK EXCERPT

MANAGING YOUR INTELLECTUALS 177

They deal mainly with ideas rather than things, and most are on somebody's payroll. Getting them to do their best is an art, not a science. Here are some guidelines from an expert on administering those highly creative employees who are never totally for hire. *by Hedley Donovan*

DEPARTMENTS

EDITOR'S DESK 8

INDEX 12

NEWS/TRENDS 16

Retailing roulette, the Pritzkers' fortune gets bigger, safe junk bonds, and more

FORTUNE FORECAST 31

If the miniboom in consumer spending has you worried, don't panic: Consumers are cooling off. Spending will slow and continue through 1990 at a sustainable pace. *by Vivian Brownstein*

PERSONAL INVESTING 35

Here are fortresslike stocks at prices that won't drive you up the wall. *by Ellen Schultz*

Also: Good buys in municipal bonds, why wimps can be winners in index funds, and Portfolio Talk with money manager Paul Jenkel.

LETTERS TO FORTUNE 49

FORTUNE PEOPLE 195

Carl Icahn fakes a takeover battle, Roger Smith vs. a movie, and more. *by Mark Alpert*

ON THE RISE 196

BOOKS & IDEAS 201

How did Al Neuharth become one of America's top CEOs? His new book cheerfully tells us: by being an absolute bastard. *by Aloysius Ehrbar*

OFFICE HOURS 207

A few unmystical truths lurk beneath the rhetoric about "the vision thing." *by Walter Kiechel III*

KEEPING UP *by Daniel Seligman* 213

EDITOR-IN-CHIEF Jason McManus
EDITORIAL DIRECTOR Richard B. Stolley
CORPORATE EDITOR Gilbert Rogin

TIME INC. MAGAZINES
PRESIDENT Reginald K. Brack Jr.
EXECUTIVE VICE PRESIDENTS Donald M. Elliman Jr., S. Christopher Meigher III, Robert L. Miller
SENIOR VICE PRESIDENTS Richard W. Angle Jr., Michael J. Klingensmith

FORTUNE

Founder Henry R. Luce, 1898-1967

MANAGING EDITOR Marshall Loeb
EXECUTIVE EDITOR Allan T. Demaree
ASSISTANT MANAGING EDITORS Walter Kiechel III, Ann M. Morrison
INTERNATIONAL EDITOR Donald D. Holt
ART DIRECTOR Margery Peters
PICTURE EDITOR Michele F. McNally
BOARD OF EDITORS Evelyn Benjamin, Charles G. Burck, Gene Bylinsky, Geoffrey Colvin, Julie Connelly, John J. Curran, Marta F. Dorion, Edmund Faltermayer, Susan Fraker, Keith R. Johnson, Richard I. Kirkland Jr., Louis Kraar, Kenneth Labich, Colin Leinster, Carol Junge Loomis, Myron Magnet, Jeremy Main, Todd May Jr., Peter Petre, Bill Saporito, Stratford P. Sherman, Lee Smith (Washington)
SENIOR EDITOR John F. Lawrence
ASSOCIATE EDITORS Edward C. Baig, Kate Ballen, Rosalind Klein Berlin, Vivian Brownstein, Ann Reilly Dowd (Washington), Joel Dreyfuss, Brian Dumaine, Alan Farnham, Jaclyn Fierman, Brett Duval Fromson, Stuart Gannes, Catherine Comes Haight, Gary Hector (San Jose, CA), Ronald Henkoff (Chicago), David Kirkpatrick, Christopher Knowlton, Andrew Kupfer, Patricia A. Langan, Alicia Hills Moore, Sylvia Nasar, John Paul Newport Jr., Robert E. Norton (Washington), Peter Nulty, Brian O'Reilly, Nancy J. Perry, Anthony Ramirez, Carla Rapoport (Tokyo), Faye Rice, Louis S. Richman, Lenore Schiff, Brenton R. Schlender (San Francisco), Patricia Sellers, Andrew Evan Serwer, Thomas A. Stewart, Alex Taylor III, Shawn Tully (European Editor), Monci Jo Williams, Wilton Woods, Ford S. Worthy (Hong Kong)
CONTRIBUTING EDITOR Daniel Seligman
REPORTERS Reed Abelson, Mark Alpert, J. B. Blank, Susan Caminiti, Mark M. Colodny, Carol Davenport, Darienne L. Dennis, Alan Deutschman, Constance A. Gustke, Cynthia Hutton, Rahul Jacob, Frederick Hiroshi Katayama, Sandra L. Kirsch, Laurie Kretchmar, Susan E. Kuhn, Joshua Mendes, David J. Morrow, Karen Nickel, Terence P. Paré, Jennifer Reese (Washington), Charles A. Riley II, Ellen Schultz, William E. Sheeline, Julianne Slovak, Sarah Smith, Sally Solo (Tokyo), Richard S. Teitelbaum
ART STAFF Renee Klein, Leo F. McCarthy (associate directors), Linda Eckstein, Frances Fifield, Jean Held, Joan Hoffman, Nai Lee Lum, Barbara R. Smyth (designers), Meher J. Dalal
PHOTOGRAPHY Elizabeth Cheng Krist, Eric Godwin (assistant picture editors), Maureen Duffy Benziger, Christopher E. Green, Shirley Santino
EDITORIAL OPERATIONS Donald G. Biglands (manager), Carol Gwinn (copy chief), Charles Blackwell (deputy), J. Randall Sizemore (technology chief), David Sloan (deputy), Charles J. Attardi, Leslie Brenner, Jonathan Brown, Leon A. Douglas, Edith Firoozi Fried, Anne Glusker, Scott Kelliher, Simone M. Kilian, Daniel Lawrence, Michelle Lockhart, Frances Owles, David V. Rile, Mary Alice Rudovsky, Sara Solberg, Susan R. Visconti, Dennis Williams, David Wray
PRODUCTION Guy Gleysteen (makeup manager), Robin Kaplan (deputy)
EDITORIAL FINANCIAL MANAGER Cathy O'Brien
EXECUTIVE ASSISTANTS Anne Gut, Carolyn Sampson
EDITORIAL SERVICES Christiana Walford (director)

PUBLISHER James B. Hayes
GENERAL MANAGER Gregory J. Zorthian
CONSUMER MARKETING DIRECTOR Kenneth Godshall
BUSINESS MANAGER Merida Welles
CORPORATE PRODUCTION DIRECTOR Barry R. Meinerth

U.S. ADVERTISING SALES DIRECTOR John E. Jay
NATIONAL SALES MANAGER James D. Graham
MARKETING DIRECTOR Dennis E. Blank
PROMOTION DIRECTOR David L. Nimz
INTERNATIONAL ADVERTISING DIRECTOR Michael D. Dudler

EDITOR'S DESK

ANDY FREEBERG

The cities crew, clockwise from lower right: Lawrence, Eckstein, Labich, Caminiti, Blank, Gannes, Kirkpatrick

WHAT'S THE BEST ole town in the U.S.A.?" asked real estate man George F. Babbitt in Sinclair Lewis's famous novel. Predictable answer: his own hometown. "It's evident to anyone with a head for facts that Zenith is the finest example of American life and prosperity to be found anywhere."

The problem, as business people considering relocation discover, is that the facts are tough to pin down. Says senior editor John Lawrence, who supervised our cover stories on America's best cities for business: "Most efforts to compare the attractiveness of cities avoid hard analysis. They are long on anecdotes but short on statistics."

Not FORTUNE's. For as long as two months Lawrence, associate editor David Kirkpatrick, and reporters Susan Caminiti and J. B. Blank have been working with experts from the corporate relocation consulting firm of Moran Stahl & Boyer to develop true apples-to-apples comparisons of the 31 biggest U.S. metropolitan areas. The results are based on government data and information gathered from major employers and city officials. For a quick take on your own Zenith—labor supply, infrastructure, economic base, relative cost, and quality of life—look at the tables at the end of the package created by designer Linda Eckstein.

In preparing the lead story, which begins on page 56, writer Kenneth Labich interviewed government and business chiefs in highly rated Dallas/Fort Worth and Atlanta. "Leaders of these communities are very pragmatic about what it takes to attract new businesses," he says. "The mayors run decidedly pro-business administrations, offering everything from tax incentives to free economic planning for enterprises looking to move to their towns." Their timing couldn't be better. Last year more than 80% of the FORTUNE 500 chief executives said they expected to relocate some plants or offices.

Companies that do decide to move are attracted increasingly to midsize cities with well-educated labor forces. Writer Stuart Gannes uncovers five such up-and-comers, including some sleeper choices. Says Gannes: "Not only are these towns attractive to employers, but they also offer affordable housing, shorter commutes, and a lower cost of living than many larger cities."

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President, Joseph A. Ripp, Treasurer, Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $47.97, Canada: one year (27 issues) $64.53. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, Fla. 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-621-8000. © 1989 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company. **For subscription queries, call Customer Service at: 1-800-621-8000.**

pany of FORTUNE's publisher.

But Columbia needs help. It made only $21 million on sales of $1.6 billion for the fiscal year ended February 1989. Meanwhile, CBS Records—an uneven performer when Sony bought it for $2 billion in 1987—is making huge profits.

– David J. Morrow

ETHAN HOFFMAN

Morita: Hollywood splashdown

ADD $10 TO THE PRITZKER BILLIONS

■ **Hyatt Hotels** closed its Chicago headquarters for a day in late September and dispatched its 375 corporate employees to the chain's 98 inns around the country to make beds, carry luggage, and otherwise get to meet paying guests and hotel employees. Among those to hit the road: President Thomas Pritzker, 39, whose family controls the hotels. His father, billionaire Jay Pritzker, heads a huge private empire with interests in manufacturing and real estate.

The younger Pritzker spent a day at the Grand Hyatt in Washington, D.C., working 90-minute shifts as a bellhop, cafeteria server, and deli counterman. Says he of his hands on toil: "It was a lot more fun than sitting in an office." Another extra: "I got about $10 in tips."

– Colin Leinster

Thomas Pritzker as bellhop: having a lot more fun than usual

RHODA BAER

JUNK: THE WEAK AND THE STRONG

■ Like jello, the $200 billion junk-bond market jiggled these past few weeks but didn't break. It was already trembling from the summer defaults of **Resorts International** and **Southmark** when **Campeau**, the Canadian parent of Allied Stores and Federated Department Stores, admitted it was so short of cash it could not pay for merchandise to put on the racks. Then **Olympia & York**, the Toronto real estate powerhouse owned by the Reichmann family, came to the rescue with a $250 million loan.

Where will the next bad news come from? One study reveals both frailty and relative robustness among 20 of the largest junk-bond debtors. The chart above, compiled by McCarthy Crisanti & Maffei, a high-yield research service in New York, shows a melting pot: former investment-grade issuers that have slunk into junk on operating disasters (**Long Island Lighting**), as well as companies leveraged up from buyouts (**Southland**) and recapitalizations (**Harcourt Brace Jovanovich**).

WHO'S ON TOP OF THE JUNK HEAP

ISSUER	JUNK BONDS in billions	ESTIMATED DEFAULT RISK 2 years	ESTIMATED DEFAULT RISK 5 years	RECENT PRICE percent of face value	CHANGE 8/31 to 9/27
RJR Holdings	$14.8	2	4	103.0	−4.5
Long Island Lighting	$3.3	1	3	103.0	−0.5
Owens-Illinois	$2.9	1	4	96.0	−4.5
Quantum Chemical	$2.1	2	5	96.0	−4.0
Southland	$1.7	3	6	52.0	−22.0
SCI Holdings	$1.7	2	4	108.0	−1.5
Wickes	$1.6	3	6	68.0	+3.0
Safeway Stores	$1.6	2	4	101.5	−1.5
Fort Howard	$1.6	2	5	99.5	−3.0
Union Carbide	$1.6	1	2	86.0	−2.0
Harcourt Brace Jovanovich	$1.6	2	5	102.0	−2.0
E-II Holdings	$1.5	4	6	67.0	−3.0
R.H. Macy	$1.5	2	4	102.5	−1.5
USG	$1.5	3	5	66.0	−12.0
Federated Dept. Stores	$1.4	6	7	62.0	−21.0
Allied Stores	$1.4	6	7	40.0	−11.0
National Gypsum	$1.0	3	5	70.0	−4.0
Burlington Holdings	$1.0	2	5	104.0	−2.5
American Standard	$1.0	2	5	102.0	−2.0
Interco	$0.8	5	6	57.0	−4.0

SOURCE: MCCARTHY CRISANTI & MAFFEI

A default risk of one is safe; seven means a 75% chance of default.

The researchers looked at such vital financial signs as sources of emergency funds and the amount of interest expenses covered by cash flow. They rated the companies for default risk over the next two years—assuming a recession in 1990, an assumption FORTUNE does not share—and the next five years. A rating of one represents a 1% chance of default, while a seven packs a nerve-jangling 75% risk.

Union Carbide, whose ratings straddle the Maginot line between investment-grade bonds and junk, is low on the default scale because it generates 4½ times the cash needed for its annual interest payments. Allied and Federated, on the other hand, are flashing sevens for the next five years despite Campeau's recent reprieve. Also looking shaky is **E-II Holdings**, a spinoff from the old Beatrice. E-II, now controlled by retailing magnate Meshulam Riklis, has one of the group's lowest ratios of cash flow to interest expense.

Some junk bonds have recovered from the Campeau crisis. But most are down a bit, partly because a lot of new offerings are hanging over the market. The prices shown on the table are for actively traded issues selected from each company's basket of bonds. Mark Walsh, Morgan Stanley's chief of high-yield research, sizes up the recent damage: "There was no hurricane." **– Susan E. Kuhn**

BANKS TO BRADY: DROP DEAD

■ By sharply boosting reserves to cover loans to Third World countries, **Manufacturers Hanover**, **Chase Manhattan**, and

J.P. Morgan seem to be out to scuttle Treasury Secretary Nicholas Brady's plan to reduce Third World debt. Says James J. McDermott Jr., research director at Keefe Bruyette & Woods: "The banks are really throwing down the gauntlet."

Brady recently met with the chairmen of several banks, including Lewis Preston of Morgan and Willard Butcher of Chase. But he apparently failed to persuade them to lend new money to Third World countries while at the same time forgiving billions in debt.

Instead the banks have put their cash into reserves to protect themselves against possible defaults. Some analysts believe the banks are playing hardball to force the U.S. government into guaranteeing the new loans, which it refuses to do.

BANK EXPOSURES

	LDC LOANS $ billions	PERCENT IN RESERVE
CITICORP	8.9	29%
BANKAMERICA	7.4	37%
MANUFACTURERS HANOVER	6.7	36%
CHASE MANHATTAN	6.2	46%
CHEMICAL	4.4	28%
BANKERS TRUST N.Y.	3.1	32%
J.P. MORGAN	2.8	100%

Morgan, which took a hit on third-quarter earnings to boost reserves by $2 billion, now has an extraordinary 100% reserve ratio to medium- and long-term debt to less-developed countries, or LDCs (see chart). Now the bank could even drop its support of the IMF, the World Bank, and government programs to bail out the Third World. Chase and Manny Hanny have also increased their reserves, and **BankAmerica**, Chemical, and **Citicorp** are expected to follow suit. **– D.J.M.**

Brady: Banks aren't buying his solution to Third World debt.

CATHERINE LAMBERT

Unocal extracts oil from shale brought in from its Colorado mine.

RAY NG

HERE'S TO SHALE OIL (AGAIN)

■ Some people never quit. After petroleum prices spiked in the Seventies, big oil companies rushed to develop vast new energy sources like oil shale. Then prices leveled, and one by one the companies sold these projects or shut them down. All except **Unocal**, which for five years has been trying to perfect a small demonstration processing plant at Parachute Creek, Colorado.

This year, says Chairman Richard Stegemeier, the operation is approaching breakeven. But it's a funny sort of "even." The plant has been crushing more than 10,000 tons of rock a day to produce about 6,800 barrels of synthetic crude. The plant runs at 70% of capacity, and Unocal says that it needs 90% to cover operating costs.

The company gets $52 a barrel for the shale oil it produces. The oil goes to a refinery and is particularly valued as a source for jet and diesel fuel. But the refinery pays only some $25 a barrel on average. The other $27 or so is paid by the federal government. The price support runs for up to ten years or $400 million, whichever comes first. So far three years and about $60 million of the taxpayers' money have gone by.

Unocal's shareholders have spent far more. The company has written off more than $650 million invested in the pursuit of shale oil since the 1950s. Operating losses at Parachute Creek in 1988 were about $50 million. This year, says Stegemeier, they should be less than $10 million.

Why is Stegemeier so persistent? "This is a technology for the early part of the next century," he says. "We want to have it on the shelf." Also, Unocal has about three billion barrels of shale oil reserves, about four times its reserves of crude. These guys are either heroically dogged—or just plain fond of dogs. **– Peter Nulty**

A FAIRER SHAKE FOR SOUTHERN BABIES

■ It's no secret that the U.S. rates for infant mortality are among the highest in the Western world. In 1987 ten U.S. infants died for every 1,000 born alive; 17 developed countries have lower rates. In the South 12 infants die per 1,000.

Now executives from a number of corporations with Southern operations—**Du Pont**, **Florida National Bank**, **Marion Laboratories**, **Southwestern Bell**, **Tenneco**, and **Burlington Industries**—are pushing ahead with a coalition to drive these statistics down by promoting free prenatal care and educational programs in the workplace.

They still lag behind their counterparts in the North and West, who, says John Schlitt, a research associate of the Southern Regional Project on Infant Mortality, "tend to provide more help and education to workers." The **Oster/Sunbeam Appliance** plant in Louisiana started teaching pregnant women about prenatal care in

A Sunbeam mother-to-be

DANNY TURNER

FORTUNE'S TOP TEN CITIES

Most of America's best metropolitan areas are distinguished by a talented work force, strong business leadership, and an ability to accommodate further growth. ■ *by David Kirkpatrick*

EVERY CITY has particular charms: If you are a fanatic about frozen custard, you may never be happy anywhere except Milwaukee. But to rank America's top ten cities for business, FORTUNE sought objective criteria that take account of today's preeminent location factors, notably the availability of qualified workers.

We began with a ranking of the 31 largest metropolitan areas, based on the opinions of the CEOs of the country's biggest corporations; these were compiled by Cushman & Wakefield, the business real estate firm. We next asked Moran Stahl & Boyer, corporate location consultants, to develop a statistical profile of each of the 31 cities that would not only describe today's conditions, but also could help predict tomorrow's. FORTUNE then used the data and our own judgment to rank the top ten.

The ten are geographically diverse, and the best city in each major region was certain to make the list. Portland, Oregon, edged out Seattle, another undeniably attractive Northwestern location. Portland has better tamed the no-growth crowd, and its economy doesn't rely so much on one employer as Seattle does on Boeing. Similarly, Baltimore outclassed Philadelphia even though by many measures the two are comparable. But Baltimore's infrastructure is in better shape, and the local leadership is more effective.

Moran Stahl & Boyer developed two proprietary indexes that make comparisons easier. The labor market stress index measures the relationship between supply and demand for labor, compared with the U.S. average. The higher the score, the tighter the labor market (U.S.=100). MS&B measured, for example, growth of employment compared with growth in labor supply since 1983. Where work force growth is lagging, a tightening labor market is in prospect, raising the index number. A city with lower-than-average unemployment also gets a higher score, as do areas where wages are rising rapidly or where the decline in 18- to 24-year-olds by 1994 is projected to be greater than the U.S. average. The fiscal stress index measures several indicators of state and local finance, including rate of growth in taxes, government bond ratings, and local government debt per capita.

Following the top ten cities, we list the remaining 21 in alphabetical order. For a detailed statistical breakdown on all 31 cities, see page 92. The data are calculated for each metropolitan area, which generally includes surrounding communities. The figure for corporate headquarters covers companies listed in both the FORTUNE 500 and the FORTUNE Service 500.

CHARLES THATCHER

DALLAS/FORT WORTH

Population	3,864,000
Total population growth 1980-89	24.2%
Cost of living index*	94
Labor market stress index*	93
Fiscal stress index*	109
FORTUNE 500 corp. headquarters	34
Unemployment rate*	5.8%

1 Don't think J.R., don't think Cowboys, and *please* don't mention the Kennedy assassination. Think incipient boomtown. The so-called Metroplex, embracing the suburbs and the area between the cities, is today's dream location for business, largely because of surplus office and factory space in the wake of the oil bust. Dallas has a 28% vacancy rate for commercial space (Fort Worth, however, has less than half that much available). Talented workers with a wide range of skills are just waiting for a call, and population growth (up 30% in Dallas in the last ten years) will support continued economic expansion. Dallas spends a relatively high $5,000 per pupil in its city schools, and as a result, SAT scores average a respectable 800. Highways and water and sewer systems are in fine shape. With no corporate or personal income taxes in Texas, the overall tax burden is low, though increasing. MS&B gives Fort Worth an A for work ethic and Dallas a B. Downtown Dallas is the financial capital of the Southwest by day. By night it lights up: Nightclubs flourish in the West End and Deep Ellum districts.

*Data for Dallas only.

ANN STATES—SABA

ATLANTA

Population	2,804,000
Total population growth 1980-89	31.1%
Cost of living index	97
Labor market stress index	100
Fiscal stress index	118
FORTUNE 500 corp. headquarters	20
Unemployment rate	5.7%

2 This is the city that defines the New South. Top executives polled by Cushman & Wakefield rated it as the most desirable city for business in the U.S. Downtown looks better than ever, with Underground Atlanta—a glitzy, refurbished, and expanded tourist-oriented mall—booming. Despite all the growth, Greater Atlanta remains the most densely wooded metropolitan area in the country. Salaries and other costs are below those of many Northern cities, and there's plenty of space for expansion. A median-price existing home goes for only $82,440. On a scale of 100 for the nation, living costs are at 97. In-migration should support continued employment growth, though the city's attractiveness could be threatened unless it gets a grip on its crime rate, by some measures the worst in the country. Property crime was up 45% from 1984 to 1988. A worrisome contrast in income and educational attainment remains between the suburbs and inner city, where SAT scores average only 720, among the lowest of the major cities. But the region is one of the few with growth in the number of young workers.

Sources: Population data—National Planning Data Corp.; cost of living index—Economic Research Institute, Newport Beach, California. Unemployment rate shown is for June 1989.

DAVID E. KLUTHO

KANSAS CITY

Population	**1,586,000**
Total population growth 1980-89	**10.6%**
Cost of living index	**95**
Labor market stress index	**93**
Fiscal stress index	**82**
FORTUNE 500 corp. headquarters	**6**
Unemployment rate	**5.5%**

3 The coastal set may not think of it as up to date, but the surprise is how much is here and what a pleasant place it can be. It's a city of fountains, museums, Frank Lloyd Wright houses, and the elegant Country Club Plaza, one of the country's finest shopping areas. There's a swath of blight and poverty, but even the poor neighborhoods are spacious and green. A hub for agriculture-related industry, the city is rapidly diversifying. Hallmark has played a major role in rejuvenating the downtown, but this is no one-business city and corporate leaders take a strong interest in civic affairs. There's an excellent work ethic, and for those who want to be close to the job, pleasant housing in center city. Public transit is lacking; commute times run anywhere from 15 to 50 minutes from major suburbs. Technical and professional labor is in good supply. The mid-continent location makes K.C. a top candidate for distribution centers. Housing is affordable. Tax and debt burdens are relatively low. A $50,000 salary here is the equivalent in spending power to $70,500 for a Manhattanite. Besides that, the ribs are great.

ALAN D. LEVENSON

LOS ANGELES*

Population	**8,804,000**
Total population growth 1980-89	**17.7%**
Cost of living index	**138**
Labor market stress index	**73**
Fiscal stress index	**118**
FORTUNE 500 corp. headquarters	**26**
Unemployment rate	**5.0%**

4 What much of the country sees as La-La Land, business increasingly sees as location land. Abundant labor and access to the hot Pacific Rim are the main draws. But with increasing highway congestion, a stubborn air-pollution problem, and risk of a water shortage, continued growth will bring continued stress. Proposed air-quality regulations extend even to deodorants. The immigrant population, eager to find jobs, continues to burgeon. The number of young labor-force entrants will drop only 4% in the next five years, less than in most cities. The city's prime location and huge market offset the high cost of operating there. But fiscal stress is generally high, as are housing prices: Median prices for existing homes, now at $204,099, are second only to those in San Francisco among major cities. Commute times in this consummate car town can be interminable, though the seemingly ubiquitous cellular phones help keep drivers in touch with the office. A vigorous cultural scene is developing. And for those who like boats, or beaches, or hiking and skiing in the mountains, this is the best of the big cities.

*Data for Los Angeles County.

RHODA BAER

BALTIMORE

Population	**2,358,000**
Total population growth 1980-89	**7.2%**
Cost of living index	**115**
Labor market stress index	**107**
Fiscal stress index	**109**
FORTUNE 500 corp. headquarters	**6**
Unemployment rate	**4.8%**

5 After years of quiet decay, Baltimore has created something worth stopping and staying for on the run between New York City and Washington, D.C. The most compelling signs of change are in the Inner Harbor, where a dramatically situated aquarium, opened in 1981, and many places to eat and shop have helped spur a commercial and residential renaissance. Now pristine hotels and offices abound there. With a major port and fine transportation, this is an attractive alternative to nearby metropolises, offering East Coast location at much lower cost. The median-price home is only $93,462, in contrast with $145,409 in D.C. Highways, bridges, and sewers are in good shape for an older city; the economy is diverse, and the people are cosmopolitan. It is a city of close-knit neighborhoods that have been sustained by publicly financed renovation and a middle class returning to town. Violent crime fell 4.4% from 1984 to 1988. Inner city education is a problem: SAT scores average 754, nearly 200 points lower than in the suburbs. The student/teacher ratio in town is 37, vs. 18 in the outlying schools.

NINA BARNETT

NEW YORK*

Population	**8,618,000**
Total population growth 1980-89	**4.2%**
Cost of living index	**134**
Labor market stress index	**87**
Fiscal stress index	**182**
FORTUNE 500 corp. headquarters	**110**
Unemployment rate	**5.0%**

6 Love it or hate it, there's nothing like it. Nobody claims that costs aren't high, but many businesses can't care—they have no choice but to be in the Big Apple. It's still the world capital of communication, finance, and the arts, among many other businesses. Expansion is notoriously difficult. The cost of business construction is the highest in the country by a considerable margin. The typical monthly business electric bill is $11,341; no other city even reaches five digits. Salaries in almost every category are highest here. With the median-price house selling for $185,541, pay to attract talent can hardly stop rising. The labor force is low in quality though tantalizingly huge. "New York could be *the* place for business if it could just do something about its public education," says Dennis Donovan, senior vice president of MS&B. Highways are potholed and congested, commutes are long, and taxes are high. And forget about finding a taxi in the rain. Still, nearly one in ten of the FORTUNE 500 industrial companies and one in eight of the service companies are headquartered in the five boroughs.

*Data for city plus Westchester, Rockland, and Putnam counties.

JOHN HARDING

THE BAY AREA

Population	6,118,000
Total population growth 1980-89	38.2%
Cost of living index*	133
Labor market stress index*	87
Fiscal stress index*	109
FORTUNE 500 corp. headquarters	27
Unemployment rate*	3.7%

7 For businesses that need highly educated workers who in turn demand a quality living and working environment, this is a prime location. While the bloom is temporarily off rapid expansion in the computer industry, centered near San Jose, 40 miles southeast of the Golden Gate, high-tech entrepreneurship has attracted a core of talent that will aid the region's economy. Finance-oriented San Francisco may suffer growing pains while San Jose becomes the bigger city. In-migration should support future job creation throughout the area, including Oakland. The cost of living is a third higher than for the nation, and housing prices rank No. 1—but few cities can compete in terms of culture and recreation. Mass transit is an asset, including the Bay Area Rapid Transit system from the East Bay, but highways are overloaded. Environmental activism complicates development efforts. The fact that San Francisco led the country in smoking restrictions, comparable worth raises for government workers, and child-care centers for office workers may put off some employers—but it draws employees.

*Data for San Francisco only.

JIM SCHAFER—VIEW FINDER

PITTSBURGH

Population	2,087,000
Total population growth 1980-89	−6.0%
Cost of living index	99
Labor market stress index	100
Fiscal stress index	118
FORTUNE 500 corp. headquarters	16
Unemployment rate	4.7%

8 Nothing used to say Pittsburgh more than long rows of smokestacks belching foul smoke. Today the city has lower levels of the toxic pollutant sulfur dioxide than Baltimore, Chicago, or New York City. The decline of the steel industry allowed Pittsburgh to literally clean up its act. Now it is highly rated as a place to live. Thousands of new jobs have been created in medicine, biotech, and financial services. The turnaround took extensive cooperation between business and government, and benefited from a strong work ethic and help from Carnegie Mellon and other local universities. While Pittsburgh is still losing population, MS&B believes it will start gaining as the economy revives even further, becoming a center for divisional headquarters, with its work force well trained in professional and technical skills. Business costs are lower than in the Northeast, yet that market is within easy reach. Median cost of a house: $64,183, lowest on the list of 31. Highways are more than adequate, with most commutes under 30 minutes. And Pittsburgh has more golf courses per capita than any other U.S. city.

C. BRUCE FORSTER

PORTLAND

Population	1,199,000
Total population growth 1980-89	8.5%
Cost of living index	100
Labor market stress index	107
Fiscal stress index	155
FORTUNE 500 corp. headquarters	8
Unemployment rate	4.3%

9 Mount Hood looms overhead, a constant reminder of the nature so beloved by the city's legions of environmentalists. Their views also loom large here: An ordinance prohibits new houses from casting excessive shadows on their neighbors'. But a once pervasive no-growth mentality is dissipating, and a newly well-organized group of civic activists promotes development. Downtown has revived and boasts innovative architecture. Quality of life is consistently rated high, despite the nation's highest bank robbery rate (often attributed to the region's characteristically airy and inviting bank offices). Housing costs are among the lowest on the West Coast, averaging $75,760, vs. $204,099 in Los Angeles. The work ethic is excellent even though many workers need occasional sprees among the trees. A highly educated work force—Oregon has one of the nation's strongest public school systems—has recently drawn high-tech companies. Wages and energy costs are low. Portland's highways are ample. Experts anticipate an influx of Californians fed up with high costs, jammed freeways, and bad air.

STEVE WOIT

MINNEAPOLIS/ST. PAUL

Population	2,414,000
Total population growth 1980-89	13.0%
Cost of living index	104
Labor market stress index	107
Fiscal stress index	145
FORTUNE 500 corp. headquarters	27
Unemployment rate	4.4%

10 To say the Twin Cities have come back is misleading, because they were never very far down. Quality of life is a major attraction. The area has the highest educational attainment (SAT scores in Minneapolis city schools average 1,002) of all the 31 places studied, with little differential between the city and suburbs. The work ethic is strong, perhaps due to all those Lutheran Scandinavians who flocked here in the 19th century. Unemployment is low, but as growth continues, MS&B expects many homesick former residents with professional and technical skills to return, preventing a labor squeeze. Operating costs are well below those of Chicago and the Northeast. Energy costs are among the lowest of the areas surveyed. Housing is easily available, and the price is reasonable: The median for a single-family dwelling is $93,223. Air service is good, with congestion rated low by MS&B and not expected to increase appreciably through 1997. Crime is also low—only 86% of the all-city average. About the only negatives: frigid winters and heavy tax burdens—the area has a big fiscal-stress-index number.

THE REST OF THE MAJOR CITIES

BOSTON

Growth has not been banned in Boston, but it's a problem. The city was one of the great urban revival stories, thanks largely to the high-tech and finance industries. But the labor market now is excruciatingly tight. Business costs in general are second only to New York's. Poor fiscal management clouds the future, and high housing prices slow in-migration. Creative redevelopment continues downtown, including a project with four office towers and housing.

Population	2,861,000
Total population growth 1980-89	2.0%
Cost of living index	130
Labor market stress index	140
Fiscal stress index	109
FORTUNE 500 corp. headquarters	12
Unemployment rate	3.4%

CHICAGO

A megacenter of well-known attributes, Chicago is less attractive now for companies needing a Midwest location than other cities that are less expensive and more manageable in scale. Even within the area, suburban business centers are competing effectively with the center city, where relative educational weakness is also a concern. But Chicago's art, music, innovative architecture (for example, the sparkling new United terminal at O'Hare) will keep it cooking.

Population	6,242,000
Total population growth 1980-89	3.0%
Cost of living index	99
Labor market stress index	113
Fiscal stress index	100
FORTUNE 500 corp. headquarters	42
Unemployment rate	5.4%

CINCINNATI

The city's reputation is growing. With clean, tree-lined streets, a riverfront location, moderate business costs, and a strongly work-oriented citizenry, Cincinnati has always been attractive for business. Longtime resident Procter & Gamble built an elegant new office complex in 1985. Quality of life is fine, especially in the numerous distinct neighborhoods defined by the hills that surround the city—like Mount Adams, which has 19th-century houses on steep, narrow lanes.

Population	1,459,000
Total population growth 1980-89	4.1%
Cost of living index	98
Labor market stress index	127
Fiscal stress index	91
FORTUNE 500 corp. headquarters	16
Unemployment rate	5.0%

CLEVELAND

Twenty years after the Cuyahoga River caught fire, pike and bluegill now swim there and restaurants line its banks. The vastly cleaner water serves as a metaphor for the rebound. While old heavy industrial plants remain shuttered, smaller companies, many of them technology-oriented, are springing up. Often they start with the aid of an important local business consortium put together by leaders of the old-line corporations. Assets: low costs, a quality labor supply.

Population	1,857,000
Total population growth 1980-89	−2.2%
Cost of living index	99
Labor market stress index	100
Fiscal stress index	100
FORTUNE 500 corp. headquarters	14
Unemployment rate	5.0%

COLUMBUS

A quiet town with solid credentials: excellent educational system and attainment levels, a large finance, banking, and insurance industry, and the government of Ohio. Its mayor has taken a strong stand against drugs, and community leaders, including Leslie Wexner, chairman of the Limited, give strong support to the arts. After rapid job growth in recent years, the labor market shows signs of stress. The main problem: Demand for workers is outstripping supply.

Population	1,351,000
Total population growth 1980-89	8.6%
Cost of living index	101
Labor market stress index	127
Fiscal stress index	91
FORTUNE 500 corp. headquarters	6
Unemployment rate	5.0%

DENVER

With employment growing more slowly than population and housing prices down 15% since 1987, Denver's loss could be a company's gain. The well-trained but underemployed work force doesn't want to leave its Rocky Mountain home. It is expected to rebound as a regional center; the city should benefit from increased trade with Canada. Finance, services, and distribution should prosper. In May development-minded voters approved a badly needed new airport.

Population	1,662,000
Total population growth 1980-89	16.4%
Cost of living index	102
Labor market stress index	93
Fiscal stress index	109
FORTUNE 500 corp. headquarters	4
Unemployment rate	6.3%

DETROIT

More than ten years ago, Renaissance Center was supposed to ignite a downtown revival. It hasn't. The disparity between impoverished and undereducated Detroit and its better-off suburbs is still a major challenge for city leaders. The cyclical auto industry's still-dominant status means Detroit is more subject than most cities to economic cycles. A pool of trained workers remains in the vicinity, though many are used to high car-factory wages.

Population	4,381,000
Total population growth 1980-89	−2.4%
Cost of living index	103
Labor market stress index	87
Fiscal stress index	118
FORTUNE 500 corp. headquarters	8
Unemployment rate	7.6%

HOUSTON

The worst is clearly over, but it will take time to revive fully from the oil bust that cost the city over 200,000 jobs. Yet the resulting low real estate prices and abundance of skilled labor are genuine pluses today. Still the largest city in Texas, it has many advantages: a bustling port, a vital cultural life, work force diversity. The city is loaded with pleasures, like the new de Menil Collection, an art museum drawing raves worldwide. But taxes may become a problem.

Population	**3,229,000**
Total population growth 1980-89	**18.0%**
Cost of living index	**93**
Labor market stress index	**80**
Fiscal stress index	**109**
FORTUNE 500 corp. headquarters	**23**
Unemployment rate	**6.3%**

MIAMI

A city hung over by a major image problem, largely due to the drug trade. Even tourism is threatened by the perception, considerably overblown, of constant shootouts and unregenerate drugging. Recent racial rioting hasn't helped. Only New Orleans is seen as less attractive for business by executives polled by Cushman & Wakefield. But the climate and a robust international culture remain major attractions. One asset is its financial links to Latin America.

Population	**1,828,000**
Total population growth 1980-89	**12.4%**
Cost of living index	**102**
Labor market stress index	**93**
Fiscal stress index	**82**
FORTUNE 500 corp. headquarters	**8**
Unemployment rate	**6.7%**

MILWAUKEE

A recent contest to pick a civic symbol led one cynic to suggest a sign, "Chicago—90 Miles." In the end, the whole project was abandoned. Inferiority complex aside, the city is reviving, with impressive new glass towers going up next to massive 19th-century structures. Affordable housing, uncongested highways, and top-quality utilities and services contribute to generally lower costs than in other Midwest locations, though tax rates are on the steep side.

Population	**1,404,000**
Total population growth 1980-89	**0.5%**
Cost of living index	**102**
Labor market stress index	**127**
Fiscal stress index	**109**
FORTUNE 500 corp. headquarters	**7**
Unemployment rate	**4.4%**

NEW ORLEANS

The local culture is so distinct that conventioning Republicans last year joked about needing a U.S. embassy. But while tourism is a bright spot, local government isn't. Ineffective leadership has dampened incentives for business growth. As its share of the nation's port traffic declines and the energy business languishes, New Orleans struggles to diversify. Crime rates and education are a severe problem. State and local fiscal problems seem never-ending.

Population	**1,303,000**
Total population growth 1980-89	**3.7%**
Cost of living index	**94**
Labor market stress index	**80**
Fiscal stress index	**145**
FORTUNE 500 corp. headquarters	**5**
Unemployment rate	**8.6%**

NORFOLK

Moderate costs and overall livability mark this sleeper of a city. Business hasn't fully discovered its charms, which include moderate costs and near-Northeast location. It is still home to the Navy's Atlantic Fleet, but otherwise the harbor hardly looks the same: The popular Waterside Complex of shops, restaurants, and bars stands where an abandoned dock had been. Port facilities have been continually upgraded. Getting from suburbs to work can take 12 minutes.

Population	**1,403,000**
Total population growth 1980-89	**21.0%**
Cost of living index	**102**
Labor market stress index	**87**
Fiscal stress index	**109**
FORTUNE 500 corp. headquarters	**2**
Unemployment rate	**4.3%**

PHILADELPHIA

The present here is not so rich as the past, but William Penn's city is perking up. It is too often remembered for a wandering shipful of garbage a few years back rather than for the inviting urban landscape and expanding skyline. Quality of life is excellent, with fine museums and restaurants and one of the greenest downtowns in America. Housing is affordable (a home costs $115,399). Impressive projects are polishing the city's image. A near miss from the top ten.

Population	**4,930,000**
Total population growth 1980-89	**4.5%**
Cost of living index	**112**
Labor market stress index	**107**
Fiscal stress index	**127**
FORTUNE 500 corp. headquarters	**15**
Unemployment rate	**4.0%**

PHOENIX

Hot in every way. It's one of the fastest-growing large cities, and costs of doing business are lower than for West Coast locations. Big attractions: a strong middle class and no dramatic extremes of wealth and poverty, a moderate cost of living with some of the least-expensive housing in the U.S., plenty of room for corporate expansion. Still, growth may outrun work force availability unless in-migration, already high, accelerates. Water supply is a concern.

Population	**2,086,000**
Total population growth 1980-89	**38.2%**
Cost of living index	**101**
Labor market stress index	**120**
Fiscal stress index	**127**
FORTUNE 500 corp. headquarters	**7**
Unemployment rate	**4.5%**

SACRAMENTO

Population	1,402,000
Total population growth 1980-89	27.4%
Cost of living index	107
Labor market stress index	73
Fiscal stress index	118
FORTUNE 500 corp. headquarters	0
Unemployment rate	5.3%

A once sleepy state capital rapidly becoming a high-tech center. A restored historic district near the business core recreates an 1850s gold rush ambiance. Sacramento increasingly is seen as an alternative to coastal cities, where business and housing costs are higher. The educational system is adequate, and income is balanced between city and suburbs. Challenges: attracting enough new workers, building roads and expanding public services to match the growth.

SAN ANTONIO

Population	1,343,000
Total population growth 1980-89	25.3%
Cost of living index	88
Labor market stress index	73
Fiscal stress index	109
FORTUNE 500 corp. headquarters	4
Unemployment rate	7.9%

Remember the Alamo—if you can find it in the bustling middle of San Antonio. This colorful city with a lovely river winding through its center is a seductive location. Ex-mayor Henry Cisneros helped create a pro-business atmosphere before leaving office this year. Living costs are the lowest of the 31 cities, business costs below average. Population growth means plenty of workers, but training and proficiency in English are a problem. Military presence lends stability.

SAN DIEGO

Population	2,403,000
Total population growth 1980-89	29.1%
Cost of living index	118
Labor market stress index	80
Fiscal stress index	118
FORTUNE 500 corp. headquarters	4
Unemployment rate	4.3%

Nothing horrifies San Diegans more than the prospect that their city may come to resemble Los Angeles, but that's the way it's headed. A widespread perception that it represents the best of California gives San Diego the fastest-growing economy among the 31 cities as it diversifies from being a Navy and retirement town. Large in-migration keeps labor market stress low but strains freeways and other infrastructure. Costs are high, yet lower than L.A.'s.

SEATTLE

Population	1,869,000
Total population growth 1980-89	16.3%
Cost of living index	101
Labor market stress index	100
Fiscal stress index	118
FORTUNE 500 corp. headquarters	8
Unemployment rate	4.4%

It's no secret that Seattle is a great place to live, but recent popularity bred problems. An influx of people overtaxed services. That led to so much construction downtown that some began calling it Little Beirut because the place looked so torn up. Now many residents are more focused on slowing down than speeding up, as they indicated this spring by overwhelmingly voting to restrict development. But the "Gateway to the Orient" has a bright future.

ST. LOUIS

Population	2,492,000
Total population growth 1980-89	4.8%
Cost of living index	99
Labor market stress index	100
Fiscal stress index	100
FORTUNE 500 corp. headquarters	15
Unemployment rate	5.5%

Despite the renovated Union Station (now a mall) and the new St. Louis Centre (an even bigger mall), and the ever visible Arch, a perception lingers that this isn't a happening town. Yet the city's very centrality remains a major asset. Its airport is among the best. The economy is robust and diverse. The work ethic is strong in the area, and based on SAT scores, suburban schools are among the nation's strongest. Education in the center city lags suburban schools.

TAMPA BAY AREA

Population	2,051,000
Total population growth 1980-89	27.1%
Cost of living index	99
Labor market stress index	100
Fiscal stress index	100
FORTUNE 500 corp. headquarters	3
Unemployment rate	5.2%

Tampa's rise has been so meteoric that many out-of-staters still don't know where it is. In fact the Tampa Bay area, including St. Petersburg and Clearwater, has become the largest metropolitan area in Florida and the state's busiest port. It is consistently rated among the best cities for business (No. 5 this year) by executives polled by Cushman & Wakefield. New arrivals create a large labor pool. Caution: Rapid growth is taxing the regional infrastructure.

WASHINGTON, D.C.

Population	3,774,000
Total population growth 1980-89	16.1%
Cost of living index	117
Labor market stress index	120
Fiscal stress index	200
FORTUNE 500 corp. headquarters	8
Unemployment rate	3.0%

The seat of power attracts business. The city's economy has grown more diverse as corporations that work closely with government and many nonprofit organizations have located operations here. At the same time, suburbs in both Maryland and Virginia have developed as independent business centers. But inner-city crime is a problem. So are a tight suburban labor market and overloaded schools. And beware of rising taxes. Its fiscal stress index tops the list.

KEY STATISTICS FOR THE 31 BIGGEST

Making an intelligent decision on where to locate requires getting deep into details. These data were compiled from a number of sources by Moran Stahl & Boyer in close consultation with FORTUNE.

All "A" to "D" ratings are based on MS&B's extensive interviews with existing employers and city officials in the individual cities or, in the case of air quality, on the firm's interpretation of Environmental Protection Agency statistics.

The growth projections for 18- to 24-year-olds were calculated by National Planning Data Corp. The training-capacity rating measures how well prepared each city is to train workers in new tasks.

The SAT scores represent the combined total of math and verbal tests. In some areas students take the ACT test instead, which has a top score of 36 compared with the SAT's 1,600. Suburban SAT scores are generally for the largest suburb.

All statistics on employment base come

CITY	WORK FORCE FACTORS					EMPLOYMENT BASE				
				Average SAT scores		BLUE COLLAR			WHITE COLLAR	
	Change in number of people age 18-24 by 1994	Work ethic rating	Training capacity rating	City	Suburbs	Growth since 1983	Percent of total labor force[2]	High-tech jobs as percent of total[3]	Growth since 1983	Percent of total labor force[2]
ATLANTA	0.7%	B	A	720	888	22.9%	38.0%	1.6%	42.9%	62.0%
BALTIMORE	−8.1%	B	A	754	948	−0.7%	30.0%	4.0%	27.6%	70.0%
BOSTON	−11.4%	C	D	764	929	−3.2%	30.4%	9.0%	23.5%	69.6%
CHICAGO	−9.4%	C	C	13.8[1]	19.4[1]	5.3%	33.3%	4.9%	22.8%	66.7%
CINCINNATI	−9.1%	A	C	867	1,000	11.2%	43.0%	2.7%	31.8%	57.0%
CLEVELAND	−10.4%	B	C	757	935	0.6%	39.8%	3.9%	18.3%	60.2%
COLUMBUS, OHIO	−9.6%	B	C	910	1,026	13.7%	36.4%	3.6%	32.8%	63.6%
DALLAS	−3.1%	B	B	800	929	11.9%	35.5%	5.4%	27.3%	64.5%
DENVER	−7.9%	B	B	16.8[1]	20.2[1]	5.1%	35.8%	2.1%	13.0%	64.2%
DETROIT	−9.6%	C	C	13.0[1]	19.5[1]	10.6%	41.3%	1.1%	26.0%	58.7%
HOUSTON	−10.8%	B	B	864	905	−7.5%	33.3%	1.5%	10.2%	66.7%
KANSAS CITY	−5.1%	A	A	14.6[1]	1,066	9.4%	37.5%	2.7%	23.6%	62.5%
LOS ANGELES	−3.9%	B	C	823	923	7.4%	38.9%	5.1%	21.2%	61.1%
MIAMI	−5.1%	B	A	841	834	5.2%	29.7%	1.5%	20.9%	70.3%
MILWAUKEE	−9.8%	A	B	916	1,005	7.2%	40.4%	4.7%	21.4%	59.6%
MINN./ST. PAUL	−5.4%	A	C	1,002	1,041	13.8%	39.9%	4.9%	25.3%	60.1%
NEW ORLEANS	−13.9%	B	A	988	17.9[1]	−8.0%	32.0%	0.3%	5.1%	68.0%
NEW YORK	−8.2%	C	C	799	1,053	−8.8%	27.0%	1.5%	11.6%	73.0%
NORFOLK, VA.	−5.2%	A	A	815	867	12.9%	34.2%	0.9%	35.2%	65.8%
PHILADELPHIA	−9.5%	B	A	779	967	0.7%	33.3%	4.2%	21.0%	66.7%
PHOENIX	2.3%	B	B	20.5[1]	957	29.0%	37.1%	6.5%	44.4%	62.9%
PITTSBURGH	−13.0%	A	A	839	908	−8.3%	34.8%	2.6%	15.6%	65.2%
PORTLAND, ORE.	−5.3%	B	B	905	950	13.3%	35.6%	10.1%	25.1%	64.4%
SACRAMENTO	−1.7%	B	C	926	911	29.3%	26.0%	0.9%	37.9%	74.0%
SAN ANTONIO	−6.0%	B	B	678	934	4.2%	28.6%	0.7%	24.1%	71.4%
SAN DIEGO	−5.3%	B	C	919	933	23.1%	30.9%	7.4%	43.8%	69.1%
SAN FRANCISCO	−5.9%	B	D	856	889	-2.0%	29.1%	1.9%	13.8%	70.9%
SEATTLE	−2.9%	B	B	944	970	27.7%	38.5%	3.0%	31.0%	61.5%
ST. LOUIS	−7.9%	B	A	764	985	6.3%	39.1%	2.2%	22.1%	60.9%
TAMPA BAY AREA	1.6%	B	A	909	917	19.9%	27.7%	4.0%	38.6%	72.3%
WASHINGTON, D.C.	−4.1%	C	D	715	978	29.4%	18.9%	2.3%	35.2%	81.1%

[1] ACT score. [2] Nonagricultural. [3] Illinois data not comparable to rest of U.S.

from the federal Bureau of Labor Statistics, as does the clerical salaries index. Business-related construction costs are tracked by Marshall's Valuation Guide. Tax rates come from the Bureau of the Census, crime statistics from the Department of Justice. The housing figures measure the cost of a median-price existing home and come from the WEFA Group's Real Estate and Construction Service. Commute times are calculated by MS&B. Airport data, from the Federal Aviation Administration, measure congestion in terms of hours of flight delays rather than numbers of flights, producing a few surprises—New York City, for instance, for all its air traffic, has a low delay experience vs. other major cities. The words "increasing" or "stable" refer to the outlook for airport congestion in the next ten years.

Data aren't always available for an entire urban area, so for Dallas and San Francisco the statistics below omit nearby cities that make them additionally attractive to business. Cost and crime indexes are based on 100 as the average of all U.S. cities.

REPORTER ASSOCIATE *J. B. Blank*

BUSINESS COSTS			INFRASTRUCTURE			LIVING ENVIRONMENT			
Average clerical salaries index (U.S.=100)	**Construction cost index (U.S.=100)**	**State/local taxes per capita**	**Airport congestion**	**Highway conditions rating**	**Utility capacity rating**	**Housing costs**	**Crime incidence index (U.S.=100)**	**Air quality rating**	**Average commute time to downtown (minutes)**
101	102	$1,281	High, increasing	C	B	$82,440	132	B	25-75
100	117	$1,743	Low, increasing	B	A	$93,462	101	B	25-50
101	142	$1,933	Low, increasing	D	C	$182,393	81	B	45-75
102	123	$1,547	High, stable	C	B	$100,247	N.A.	C	45-90
96	119	$1,413	Low, increasing	B	A	$73,671	63	B	20-35
95	129	$1,413	Low, increasing	A	A	$70,537	73	B	17-26
89	118	$1,413	Low, increasing	B	A	$74,196	87	A	15-35
100	98	$1,291	High, stable	B	A	$94,710	174	C	25-45
100	106	$1,486	High, increasing	B	B	$82,807	105	C	10-35
108	126	$1,705	Low, stable	A	A	$73,580	111	B	15-35
109	101	$1,291	Low, stable	B	A	$64,812	129	B	18-39
101	111	$1,152	Low, increasing	A	A	$74,239	111	B	15-50
117	133	$1,725	High, increasing	D	B	$204,099	107	D	35-75
96	100	$1,271	Low, increasing	C	B	$85,097	193	B	12-40
90	121	$1,731	Low, increasing	A	A	$77,873	82	A	15-25
98	121	$1,716	Low, stable	B	A	$93,223	86	A	17-22
97	103	$1,254	Low, increasing	B	B	$75,221	120	B	15-50
107	160	$2,536	Low, increasing	C	A	$185,541	140	D	50-65
84	110	$1,402	Low, stable	A	A	$104,883	92	A	12-29
99	129	$1,458	Low, increasing	B	A	$115,399	68	C	22-45
91	111	$1,493	Low, increasing	B	B	$91,463	121	C	20-40
98	115	$1,458	Low, stable	A	A	$64,183	49	B	23-38
101	113	$1,434	Low, increasing	B	B	$75,760	142	A	20-40
100	131	$1,725	Low, stable	B	A	$103,253	113	A	30-35
91	94	$1,291	Low, stable	A	A	$73,725	165	A	15-30
102	129	$1,725	Low, stable	C	B	$166,411	115	C	15-50
117	148	$1,725	Low, increasing	D	A	$247,940	102	C	45-50
106	119	$1,589	Low, increasing	B	A	$122,739	130	A	25-50
95	118	$1,152	Low, increasing	A	A	$83,113	87	B	15-25
86	105	$1,271	Low, stable	C	B	$73,991	131	B	30-45
102	118	$2,748	Low, increasing	D	A	$145,409	89	D	15-60

A TIME BOMB FOR U.S. TAXPAYERS

The government guarantees millions of mortgages, bonds, deposits, and student loans. These liabilities, now twice the national debt, are growing fast. So are defaults. ■ *by Robert E. Norton*

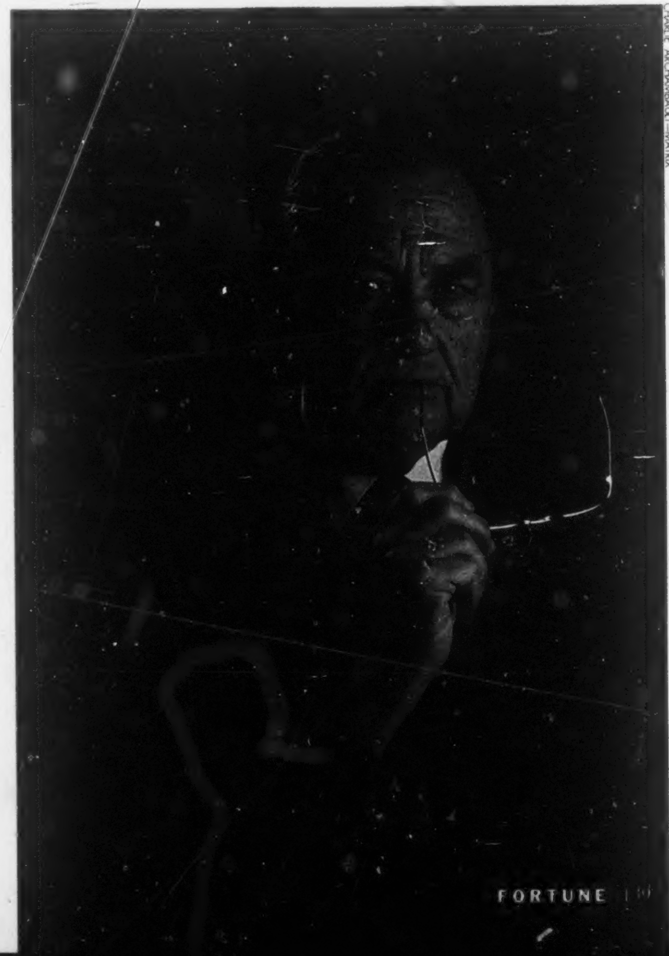
TIRED OF worrying about America's budget deficit? Now you can start worrying about the vast sums that are *not* on the budget. Uncle Sam's off-budget guarantees will climb from $2.1 trillion in 1980 to nearly $5 trillion next year, more than twice the size of the national debt. You can take small comfort in the fact that these are contingent obligations, not actual loans, so taxpayers should have to pick up only a small percentage of that massive tab. Still, for the past few years that percentage has been rising alarmingly.

Between now and 1992, the U.S. government will have to spend at least $20 billion on loan and deposit guarantees that have already gone bad. Assume a less rosy economic scenario than the Bush Administration does and those hidden costs soar. Factor in a serious recession, and you're staring at a ticking time bomb. Warns Texas Democrat J.J. "Jake" Pickle, chairman of the oversight subcommittee of the House Ways and Means Committee: "We surely must accept that these off-budget liabilities can have very sudden and profound on-budget consequences."

That's not a message many folks in Washington want to hear. Not a penny of that $20 billion in losses appears in official budget projections. Indeed, to maintain the pretense that they are hitting the deficit reduction targets set by the Gramm-Rudman-Hollings law, Congress and the White House have been busily conniving to shove even more spending off-budget. That's not only disingenuous, it's dangerous. Remember the S&L mess? That $160 billion disaster crawled out of this same murky swamp of federal credit and loan guarantee programs. Recently there have

UNCLE SAM'S $4.8 TRILLION WORTH OF HIDDEN RISKS

	GOVERNMENT GUARANTEES	AMOUNT OUTSTANDING IN 1990 BILLIONS	GROWTH 1980-90
■	**Government-insured deposits**	$2,986	100%
■	**Govt. Natl. Mortgage Assn.**	$386	330%
■	**Federal Housing Admin.**	$345	175%
■	**Fed. National Mortgage**	$312	495%
■	**Fed. Home Loan Mtge. Corp.**	$302	1,305%
■	**Fed. Home Loan Bank System**	$160	335%
■	**Veterans Administration**	$134	35%
■	**Student loans**	$56	300%
■	**Farm Credit System**	$54	-13%
■	**Student Loan Marketing Assn.**	$34	1,355%



CHARLIE ARCHAMBAULT—MATRIX

Texas Democrat J. J. Pickle is taking a hard look at off-budget debt.

Uncle Sam once insured this Denver house; now he owns it, along with 50,000 others. Trespassers beware: The FBI is watching.

been a number of smaller fiascos, where poor accounting and bad management combined to cause an off-budget venture to suddenly gush budgetary red ink.

■ The Department of Housing and Urban Development (HUD) insures some $303 billion of mortgages for low- and middle-income people through its Federal Housing Authority (FHA). After ordering reserves to cover $1.2 billion of bad loans last year, the General Accounting Office discovered in late September that the FHA's losses had jumped to $4.2 billion in fiscal 1988. With 50,000 foreclosed homes on its books and the percentage of seriously delinquent mortgages twice as high as ten years ago, the FHA seems certain to transform nearly $5 billion of off-budget guarantees into deeper federal budget deficits over the next few years.

■ The sickest federal direct-loan program is the Farmers Home Administration (FmHA), which lends mortgage money to folks in rural areas. Its outstanding loans peaked at more than $60 billion in the mid-1980s, and by 1987, 63% were in default. Losses over the next several years are expected to reach $20 billion. Since direct loans appear on the budget, the FmHA in the mid-1980s began switching from making loans to individuals to issuing guarantees to private lenders. That way it can stay in business without asking the White House for more money. But a new study by the Government Accounting Office concludes that roughly one-third of these off-budget guaranteed loans will sour in the next few years—a loss rate only slightly lower than the FmHA was experiencing on its direct loans. The potential on-budget cost could reach $1 billion annually.

■ Recently government auditors predicted that the Veterans Administration, which

A THEFT
YOUR GOVERNMENT
A THEFT FROM
YOU!
FBI
WARNING

JIM RICHARDSON (2)

runs a $150 billion mortgage-guarantee program similar to the FHA's, would need a $450 million infusion to offset losses over the next year. Defaults in the guaranteed student loan program, which insures $52 billion in loans, are also running at an estimated 4% annual rate. There's another $2 billion a year that ought to be anticipated in the budget—but isn't.

■ In June the Guardian Bank of Hempstead, Long Island, and an affiliated mortgage company went belly-up. Though only the 120th-largest bank in New York State, Guardian had carved out a position as the country's fifth-biggest issuer of so-called Ginnie Mae securities. These are packages of residential mortgages issued by banks and savings and loans and backed with the "full faith and credit" of the U.S. through the Government National Mortgage Association (hence, "Ginnie Mae"). Of the $360 billion in Ginnie Maes outstanding, Guardian, with assets of just $420 million, had underwritten some $7 billion.

Based on its investigation, the Justice Department alleges that Guardian falsely withheld payment to investors in the mortgage securities and that its owner, Louis Bernstein, engaged in "self-dealing and misapplication of bank resources in funding the growth of an unsafe mortgage company." No indictments have been filed yet. But search warrants have been issued. A senior official at Ginnie Mae tentatively estimates his agency will have to pay between $100 million and $200 million to holders of Guardian-issued securities. A recent audit by Price Waterhouse found that Ginnie Mae has guaranteed securities issued by insolvent S&Ls—in violation of its own rules.

No one is suggesting that all off-budget programs are in trouble. Most analysts believe that Uncle Sam's biggest pool of contingent liability—the bank and savings and loan insurance funds, which guarantee nearly $3 trillion in deposits—is in little danger. Bank earnings and capital, which are the first line of defense against losses, have risen briskly in recent years. As for S&Ls, regulators have demanded that they boost their capital. Says FDIC Chairman William Seidman: "Clearly the system needs better supervision and more capital, but all the trend lines are pretty good." Though a few academics, such as R. Dan Brumbaugh Jr. of Stanford and Robert E. Litan of the Brookings Institution, disagree, even officials at the often skeptical Federal Reserve Board side with Seidman.

THE GIANT Federal National Mortgage Association (Fannie Mae) is another solid citizen. Fannie's job is to make a secondary market in mortgages, either by buying them for its own portfolio or packaging them for sale to other investors. In the early 1980s rocketing interest rates pushed its borrowing costs above the returns on its mortgage portfolio, and Fannie Mae nearly went under. Today the company boasts a dramatically improved balance sheet and turns a healthy profit. David O. Maxwell, who took over as Fannie's chief executive in 1981

REPORTER ASSOCIATE *Jennifer Reese*

Guardian Bank
Guardian Bank

LOUIS PSIHOYOS—MATRIX (2)

ATTENTION DRIVE-IN PATRONS
FOR RENT

This Long Island bank was the fifth-biggest issuer of Ginnie Maes in the U.S. Its fall will cost the government at least $100 million.

and engineered the transformation, claims it would now take "a catastrophe the likes of which was not even seen in the 1930s" to turn Fannie into a burden on taxpayers.

Nevertheless, what many policy analysts find disturbing is the sheer speed at which Fannie Mae, the Federal Home Loan Mortgage Corp. (Freddie Mac, yet another guarantor of residential mortgages), the Student Loan Marketing Assn. (Sallie Mae), and the other outfits known as "government-sponsored enterprises" (GSEs) are piling up liabilities. Total GSE obligations stand at roughly $800 million. During the past decade that debt has risen at an annual average rate of 21%—nearly twice as fast as on-budget federal borrowing.

ANOTHER long-term worry: Do the GSEs have enough capital? Fannie Mae especially operates on a thin base. Its current capital-to-asset ratio is respectable, at more than 5%. But HUD allows Fannie to count subordinated debt as capital, even though this is borrowed money carrying the government's implicit guarantee rather than stockholders' equity. Fannie's common equity to assets is only 2.2%, much less than the norm for banks and S&Ls. The level of capital, however, has doubled over the past four years, and Maxwell is taking steps to boost it further.

You will probably not be pleased to learn that Fannie Mae is regulated by the ill-starred Department of Housing and Urban Development. Recent legislation ordained that Freddie Mac will also report to HUD. Sallie Mae has no financial regulator at all. Last spring Robert D. Reischauer, director of the Congressional Budget Office, warned Congress, "Continuing the current policy of not measuring and controlling the risks of GSEs could lead to large, unanticipated federal outlays."

Though the U.S. government does not officially guarantee the debt of these quasi-private organizations, the markets have always assumed that Uncle Sam would come to the rescue in a crisis. Any doubts were resolved in 1987, when a $4 billion federal bailout saved a GSE known as the Farm Credit System.

So what should Washington do about off-budget debt? For one thing the government should not make the situation worse. Consider what some lawmakers propose for the FHA. That agency currently allows borrowers to put down less than 5% for a mortgage and also pays some closing costs. So the total can exceed the price of the house. That's fine as long as prices are going up. But when the housing market falls, or even slows, look out! Say that a homeowner with a $100,000 mortgage should have to sell for $102,000 two years after buying the house. Typical closing costs of about $7,650 would leave him with only $94,350 in cash. The hapless homeowner, whose mortgage has barely amortized, would be forced to come up with an extra $4,564 to pay it off. He would be sorely tempted to default, which is just what has been happening at the FHA.

Enter Senators Alfonse M. D'Amato (R-New York) and Alan Cranston (D-California) with a cure that would surely worsen the disease. They propose raising the maximum mortgage the FHA can insure, from $101,250 to 95% of the median house price in an area. This would permit loans as high as $200,000 in some posh places. The Senators would also further reduce the minimum down payment. Quips Gregory T. Barmore, chief executive of General Electric's mortgage insurance subsidiary: "It's hard to see how you make a house more affordable by lending someone more money than he can pay back."

WOULDN'T IT MAKE more sense to get the government out of the money-lending business? If Congress believes deserving citizens cannot buy houses for lack of a down payment, giving them the money as a check or tax credit would surely be more efficient than encouraging—and guaranteeing—ever larger mortgages that will lead to higher defaults. Loans already on the government's books could be sold off to private financial institutions, thereby limiting taxpayers' future risks and establishing the true value of these holdings.

As for the GSEs, Wall Street economist Henry Kaufman speaks for many businessmen when he advocates abolishing their current ambiguous status. Says he: "Take the name federal away, take the name of government away, and let them flourish or perish." Now that a nationwide market exists for mortgages, and such corporations as Citicorp, General Motors, and General Electric are expanding into the business, creditworthy home buyers should be able to borrow even if the Mae and Mac gang were fully privatized. Mortgage rates on lower-income housing might rise slightly—currently smaller mortgages that flow through the GSEs carry interest rates one-

A Healthier, Happier, More Confident You!

Now COOKING LIGHT Magazine can help you put more vitality into everything you do. It turns scientific, ground-breaking data into life-enriching, life-saving guidelines you and your family can live by.

You eat better, yet **give up nothing** with scrumptious new recipes. New ways to make it and bake it...lighter, tastier, healthier—with less fat, cholesterol and calories than you ever dreamed possible!

Subscribe now and save $4.50 off the newsstand price!
1 year (6 issues) only $9.00.

Call toll-free at 1-800-243-8430!

COOKING LIGHT
P.O. Box 830549
Birmingham, Alabama 35283

[illegible]

eighth to one-half a percentage point below those on larger loans. But here again, if a subsidy is meant to lower the borrowing costs, why not dole it out as a tax credit instead of masking that social cost with hundreds of billions in debt guarantees?

Whatever its philosophical merits, however, privatization is politically a dead duck. The Reagan Administration pushed the idea hard in its early years but failed to make headway against the powerful business and congressional constituencies that like the status quo. George Bush would surely do no better.

Happily, there are a host of housekeeping measures that could make the off-budget mess less messy. For starters, all off-budget programs should be forced to meet uniform accounting and auditing standards. At the Farmers Home Administration, loans granted in one year sometimes failed to show up on the following year's books. At HUD the General Accounting Office uncovered what one report calls "very serious internal control deficiencies." While bankers check to see whether a borrower has previously defaulted on a loan to them before extending another, the government, astonishingly, often does not.

In addition, Congress and the Administration need to stop sweeping losses from the government's loan programs under the rug. How? By changing the accounting treatment of these programs so that the costs of loan losses are estimated as the loans go bad, and money is set aside to cover them. That's something banks and other private sector lenders have long been required to do.

EARLIER IN THE YEAR, Congress ordered the Treasury Department to survey the risks of the GSEs and asked the General Accounting Office to study their capital adequacy. Now Texas's Jake Pickle is holding follow-up hearings. When the results of these studies are in next year, the best reform might be one suggested by the Congressional Budget Office: Grant a single department, such as the Treasury, the power not only to collect and analyze information about the risks of the GSEs but also to issue and enforce regulations to control those risks.

Congress should also stop propagating new GSEs, which are of increasingly dubious value. The latest, the Federal Agricultural Mortgage Corp. (Farmer Mac), will start packaging and selling farm loans next year, much the same way Fannie and Freddie bundle mortgages. The College Construction Loan Insurance Association (Connie Lee) will guarantee bonds issued by colleges and universities, which it estimates is a $60 billion market. Some legislators also want to boost lending to entrepreneurs by creating an agency that would buy and package small-business loans. Though it's still looking for supporters, the Venture Enhancement and Loan Development Administration for Smaller Undercapitalized Enterprises already boasts the requisite nickname—"Velda Sue."

New off-budget corporations are to ensure that the rising costs of paying for previous off-budget commitments stay, you guessed it, off-budget.

Could it be that Washington's budget accounting has gotten so creative that nobody can keep track of what's in or out of the budget? Sometimes you wonder. In the latest wrinkle Congress and the White House are creating new off-budget corporations whose sole purpose is to ensure that the rising costs of paying for previous off-budget commitments stay, you guessed it, off-budget. The first, called simply the Financing Corp., was formed in 1987 to raise $10.8 billion for the initial bailout of the savings and loans—back in the days when some argued that no more money would be required. A successor, the Resolution Funding Corp., was set up as part of this year's S&L bailout and authorized to raise $30 billion in off-budget borrowings.

To be fair, Congress and the White House did finally drop some of those S&L bailout outlays into the fiscal 1989 budget. But they did so only *after* they had already met last fall's Gramm-Rudman target. Under the Gramm-Rudman rules, of course, once you jiggle the numbers to meet your forecast for any given year, it doesn't matter how big the actual deficit turns out. This sort of flimflammery—and the growing reliance on off-budget commitments it generated—is one of the sorrier legacies of the 1980s. Neither should continue into the 1990s. F

COMPETITION

WHO'S FUELING THE FAX FRENZY

Small businesses are mad for these miracle machines. The industry's hottest companies spotted the trend while competitors were still chasing megacustomers. ■ *by Frederick H. Katayama*

IT'S THE BIGGEST THING since the PC. Businesses large and small, from Pillsbury in Minneapolis to Pizza Delight in Plainview, New York, use facsimile machines for everything from receiving orders to sending out takeover notices. Faxy ladies who want to disrobe for *Playboy* are sending their portfolios to Hef over the wire. Fax cat Donald Trump has a machine on his yacht and another beneath the seat of his $80,000 Trumpmobile. "What's your fax number?" has become part of standard business dialogue. The White House hot line to Moscow isn't a red phone; since 1984 it's been—you guessed it.

Sales of fax machines this year are expected to total 1.4 million units worth some $2 billion. That represents a 22-fold increase over the past five years. Dataquest, a San Jose, California, market research firm, expects volume to reach 3.2 million units in 1993. Result: a feeding frenzy of faxmakers. Some 25 manufacturers, offering over 60 brand names, have rushed into the American market. Six years ago there were just seven makers and nine brands.

Most are trying to catch the fast growth at the low end of the market, which includes machines selling at list prices from $2,500 to $899 (with discounts, as little as $390). The 695,000 such units sold last year accounted for over half of all sales; by 1992, says Bis Cap International, a market research firm in Norwell, Massachusetts, they will command about 70%. The industry leaders, Sharp and Murata, got to the top by focusing on the bottom.

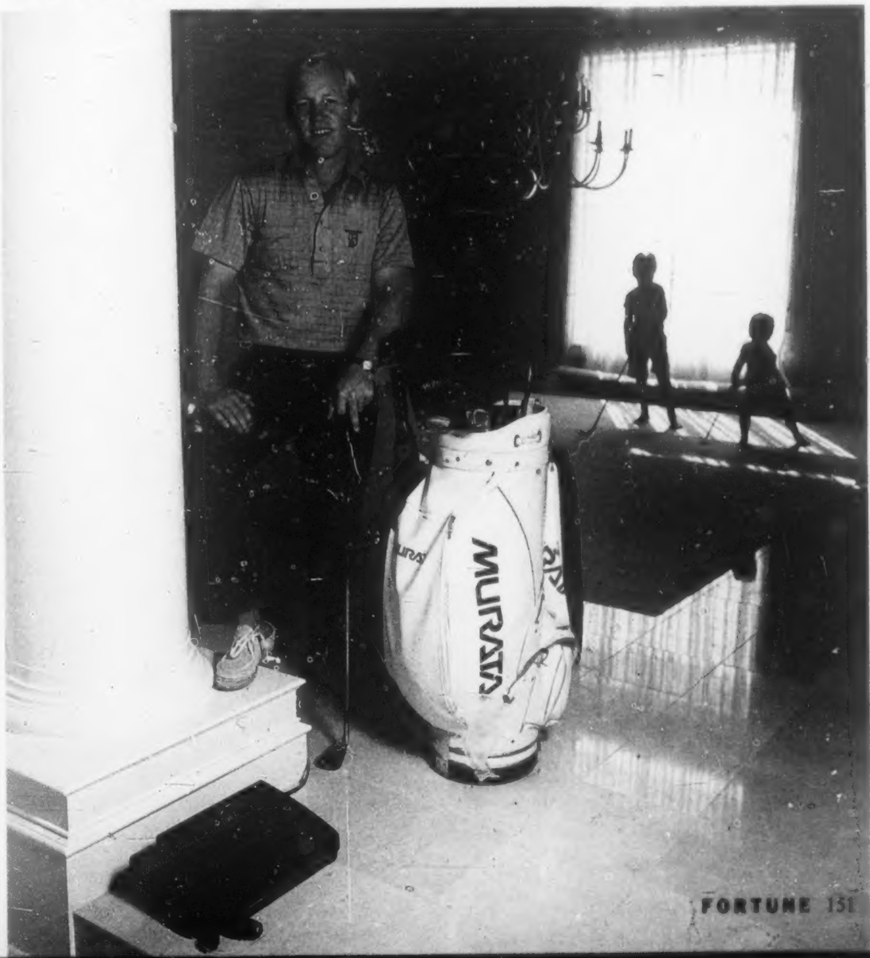
The surge in low-end faxes reflects roaring demand among small and medium-size businesses. Reliable and simple to use, the machines have become a powerful sales tool and more. Companies are saving money by doing away with messengers and overnight express mail service—Manhattan's glittery Russian Tea Room recouped the cost of its $2,000 fax machine in seven months with savings on banquet contracts, press releases, and menu changes. The machines can also double as inexpensive copiers.

For many small businesses a fax is a necessity. Mike Lee, who owns that pizzeria in Plainview, bought his because "all the delis in the neighborhood had one and customers assumed we did too." Says Casey Dworkin, general manager of Personal Technology Research in Waltham, Massachusetts: "If you're a small business today and you don't have a fax, you're nothing." The next growth spurt will come in the home office market, which analysts expect to be worth $780 million by 1995.

The most basic low-end machines, or "personal faxes," cost less than $1,500, transmit a page in about 30 seconds, and print on heat-sensitive thermal paper that spools out from a roll. More elaborate low-end units cost up to $2,500. They automatically cut documents as they print out, and offer memories that can hold incoming in-

REPORTER ASSOCIATE *Sara Hammes*

Murata's Michael Franz, at his new home in Plano, Texas, made his upstart company a star.



PHOTOGRAPH BY STEVEN PUMPHREY

FAXED
ORDERS
REGISTER

DAN FORD CONNOLLY—PICTURE GROUP

Fast-food fax fact: Houston lawyer Joseph Stiles faxes his lunch orders to McDonald's.

formation for later printing if they run out of paper. The low-end machines are not designed to handle more than ten pages or so a day—they lack such features as large paper rolls and fans for cooling during constant operation. High-end machines, costing as much as $12,500, can transmit in as little as ten seconds and run continuously, print on ordinary paper, simultaneously copy and transmit, and "broadcast" to as many as 200 destinations sequentially. Some let users punch in passwords to keep documents confidential.

LIKE THE TV AND VCR, the fax is another Western invention the U.S. surrendered to Japan. Xerox produced the world's first commercially successful fax in 1970. Xerox, Burroughs, Exxon Office Systems, and Harris/3M (now Lanier Worldwide) dominated the market in the 1970s. But then came the PC and the accompanying vision of a paperless office. Strategic planners decided that word processing was the wave of the future. Exxon quit, and Burroughs sold its business to Fujitsu. Of the survivors, Xerox makes its machines in Japan through its Fuji Xerox joint venture, and Lanier buys its from Japan and Korea.

In corporate Japan, by contrast, faxes had a clear purpose: They eliminated the chore of transliterating the complex language into Roman characters and keyboarding them into a Telex machine. By the late 1970s faxes were as common as computers, and companies such as Ricoh and the Matsushita group (maker of the Panafax and Panasonic brands) were swarming into the U.S. market with machines that were more advanced and cheaper than American-made ones.

Sharp and Murata were the earliest to court small and midsize businesses. "Everyone else was fighting for FORTUNE 500 clients then," recalls Sharp general manager Allen Mahmarian. Sharp invaded the low end of the market in 1984 with a no-frills $2,000 machine, less than half the price of anything else available. The company distributed the FO-1800 through its office dealer network, which meant a mobilization of 2,000 salesmen. Other companies used expensive direct-sales forces and could afford a battalion of 90 troops at most. Says Mahmarian: "We had a minimal product lineup, but the right distribution channel." Sharp was also first to establish a home office products division to sell faxes and other merchandise through retailers. By last year it had leaped past Ricoh, Canon, and Pitney Bowes to No. 1, grabbing 21% of the entire market (see chart, last page).

Upstart Murata was the most aggressive and nimble of all. Says Dataquest analyst Ken Landoline: "Murata is the success story everybody uses as a model." In the past three years Murata has jackrabbited from No. 10 to No. 2. Last year it earned $14 million on sales of $264 million.

THE BOYISH Michael Franz set up the U.S. subsidiary of Murata Machinery of Kyoto (revenues: $1.3 billion) in Plano, Texas, in 1982 with a co-founder and one employee. Unlike Sharp and Canon, Murata was a single-product outfit with an unknown name in the U.S. Franz, then 29, launched an advertising blitz, spending $7.5 million from 1985 to 1988, vs. $6.3 million for Sharp. Last year Murata brought out the model M1200 at $899, undercutting the competition by some $600. Canon fired back with the comparably priced FaxPhone 8, but it took 45 seconds to transmit a page, vs. 18 for the M1200, and didn't sell well. The M1200's price dropped to as low as $498 in discount outlets. Sales surpassed 100,000 units last November, and the M1200 became the industry's all-time best-seller.

The battle at the bottom will grow more intense. New competitors, among them companies that previously stuck to the upper reaches, are driving prices lower. Canon began moving downstream in 1986 and now has a solid position in that market. Matsushita added five low-end units to its single Panasonic model last November, and Ricoh launched two personal fax models in June. Fujitsu, which fell from fifth place in 1986 to 11th, is thinking about joining the fray. And then there are the South Koreans. Right now their machines are no cheaper than those of Japanese rivals because the expensive chips and thermal printer heads come from Japan. But when Daewoo, Lucky-Goldstar, and Samsung start building their own next year, analysts say, they could drive the lowest prices down to around $300.

To hedge against the price wars, Sharp and Murata are trying to move upstream. The margins are healthier—35% to 40% for mid-range and upper-level machines, vs. 20% and falling for the plain-vanilla models. Moreover, doing so could create a relatively secure market for their low-end machines. Industry experts expect that big corporations will increasingly be buying these faxes. Since such companies are more interested in features and service than price, the environment should be more benign than the small-business market for the makers that get in the door.

continued

LIFE IN THE FAX LANE

COMPANY	MARKET SHARE
Xerox	30%
Exxon	24%
Burroughs	17%
3M	14%
Matsushita	6%

1982

COMPANY	MARKET SHARE
Ricoh	16%
Canon	13%
Pitney Bowes	12%
Sharp	10%
Fujitsu	7%

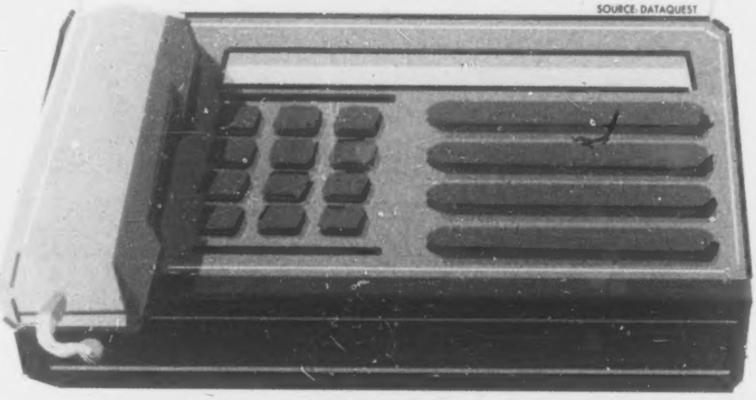
1986

COMPANY	MARKET SHARE
Sharp	21%
Murata	15%
Canon	11%
Ricoh	10%
Pitney Bowes	6%

1988

SOURCE: DATAQUEST

JIM McMAHON



Companies will outfit their field reps with faxes, and managers will want their own. Some analysts anticipate a new generation of "fax potatoes," chair-rooted workers who forgo a long walk down the hall and fax the document instead. A prototype is Geoffrey Fenton, a manager at Baxter Health Care's office park in Deerfield, Illinois; who used to hike nearly half a mile from building No. 2 to building No. 6 to deliver documents but now faxes them instead.

Scaling the corporate heights won't be easy. Says Sharp assistant general manager Steve Bachstetter: "You don't walk into GM and knock out your competitor. They've had business relationships with vendors for years." But Sharp and Murata claim their top-of-the-line machines, selling for up to $5,000, offer features that cost much more from other manufacturers. Bachstetter says that Sharp has netted over 200 big corporate accounts, among them ITT and Hershey Foods, in the year since it began its high-end mission.

Murata will soon start distributing through computer dealers to boost sales of the fancier machines. To make corporations familiar with its name, the company is spending more than $15 million this fiscal year on consumer and institutional advertising. It is also sniffing around for an acquisition to diversify its product lineup. Franz won't elaborate, but some analysts think he should seek a high-end fax company to strengthen Murata's weakest spot.

FAXMAKERS HOPE to hold their prices and keep margins from eroding further by adding more features. Automatic document feeders have surfaced on the latest personal fax entries, such as Murata's M900 and Sharp's UX-100. Some high-end features could eventually filter down. Plain paper will replace the curly, waxy thermal paper in one to three years. When the digital telecommunications network known as ISDN becomes available nationwide in the mid-1990s, new fax machines will reduce transmission time to five seconds per page, vs. the current ten to 40 seconds, and deliver much higher resolution. Color faxes? One small company, Star-Signal of Campbell, California, is selling them at $26,000, but the big manufacturers don't see a large enough market to justify making their own machines.

Analysts predict that only ten or so of the current 25 manufacturers will be left after a brutal shootout over the next few years. The likely winners: companies such as Canon, Ricoh, Sharp, and Matsushita, which are strong on both ends of the market, and Murata, because it is so strong at the bottom and so nimble. Some niche players should survive too—for example, Pitney Bowes, which specializes in renting expensive machines. Canon, the favorite of many analysts, is heavily armed with a well-balanced roster of products, and its parent company spends more than anyone else on R&D, some 10% of sales, vs. about 5% on average for the others. Among the first casualties will be marketers that buy cheap boxes from the Far East, sell them under their own names, and offer no service.

Who else is likely to win and lose? Phone companies reaped an estimated $2.3 billion last year in revenues from fax transmissions—more than faxmakers make from making faxes—and the business has nowhere to go but up. Conversely, the growth of fax has decimated Western Union's telex business, leaving it increasingly dependent on correspondence with countries that haven't yet succumbed to the fax craze. (That's a shrinking universe too. Growth is hot overseas, especially in Europe—the French have a new verb, *faxer.*) Even Western Union marketing vice president Brian Gaylord has equipped his study with a fax machine—it joins his PC, printer, answering machine, and mobile telephone. Says gadget buff Gaylord: "People can communicate to me by fax and electronic mail. And they can even phone me."

Messenger services and couriers are also smarting. Choice Courier, one of the nation's largest messenger firms, lost about $3 million, or about 10% of revenues, last year to fax. Federal Express resigns itself to giving up about 20,000 documents—or roughly $200,000—to facsimiles each day. Says Federal Express spokesman Dan Copp: "We can't compete with fax because it delivers within minutes."

DIRECT MARKETERS are winners—at least for now. Unsolicited messages account for about 1% of all fax transactions today and could grow as faxes invade more homes and firms. Purveyors like Mr. Fax of Irvine, California, blitz machines across the country with ads and offer freebies to recipients who provide fax numbers of other companies. But Connecticut and Maryland have banned junk fax solicitations, and similar bills are pending in 21 state legislatures. A congressional subcommittee has passed a bill authorizing the FCC to set up a clearinghouse to compile lists of people who would object to receiving junk fax. Advertisers who ignore the list would be penalized.

As costs come down, people will inevitably find more reasons for buying fax machines. In his prefax days, George Grillo, East Coast sales director of the Applause toy company, would call his favorite Chinese takeout in the New York suburb of Dix Hills for two orders of item No. 1, shrimp eggrolls. But the attendant, who speaks little English, would always misinterpret that to mean one of No. 1 and one of No. 2, pork eggrolls. Grillo now faxes the restaurant a copy of the menu with a big circle over No. 1. He can count on crustaceans every time. F